

AUGUST 30, 1941

Railway Age

Founded in 1856

YOUNGSTOWN

**Steel Sides
Steel Doors**



CAMEL FIXTURES

YOUNGSTOWN STEEL DOOR COMPANY
Cleveland Chicago New York Youngstown

TRANSPORTATION LIBRARY

BALDWIN

Diesel-Electrics

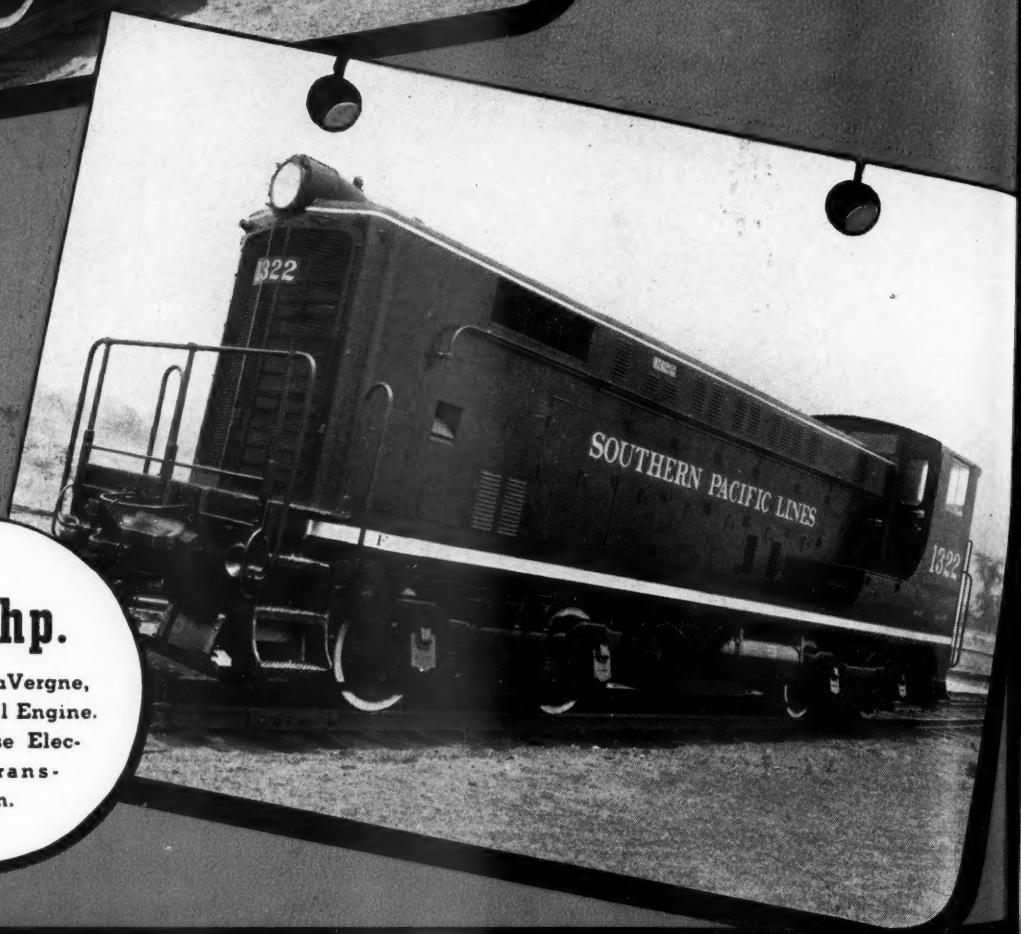
2

CAPACITIES
to Meet Your
SWITCHING
REQUIREMENTS



660 hp.

Baldwin DeLaVergne,
4-Cycle Diesel Engine.
Westinghouse Elec-
trical Trans-
mission.



1000 hp.

Baldwin DeLaVergne,
4-Cycle Diesel Engine.
Westinghouse Elec-
trical Trans-
mission.



THE BALDWIN LOCOMOTIVE WORKS

Philadelphia

Railway Age

Published every Saturday by the Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa., with editorial and executive offices: 30 Church Street, New York, N. Y., and 105 West Adams Street, Chicago, Ill.

SAMUEL O. DUNN, *Chairman of Board*
HENRY LEE, *President*

ROY V. WRIGHT, *Vice-Pres. and Sec.*
FREDERICK H. THOMPSON, *Vice-Pres.*

ELMER T. HOWSON, *Vice-Pres.*

F. C. KOCH, *Vice-Pres.*

ROBERT E. THAYER, *Vice-Pres.*

H. A. MORRISON, *Vice-Pres.*

JOHN T. DEMOTT, *Treas.*

CLEVELAND
Terminal Tower

WASHINGTON
1081 National Press Building

SEATTLE
1038 Henry Building

SAN FRANCISCO
550 Montgomery Street

LOS ANGELES
530 West 6th Street

Editorial Staff

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*
ELMER T. HOWSON, *Western Editor*
JAMES G. LYNE, *Assistant to Editor*

C. B. PECK
ALFRED G. OEHLER
E. L. WOODWARD
J. H. DUNN
D. A. STEEL
R. A. DOSTER
H. C. WILCOX
NEAL D. HOWARD
CHARLES LAYNG
GEORGE E. BOYD
WALTER J. TAFT
M. H. DICK
JOHN H. KING
W. H. SCHMIDT
JOHN S. VREELAND
C. L. COMBES
ARTHUR J. MCGINNIS

The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free. United States, U. S. possessions and Canada: 1 year, \$6.00; 2 years, \$10.00; foreign countries, not including daily editions: 1 year, \$8.00; 2 years, \$14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation Manager, 30 Church St., New York, N. Y.

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 111

August 30, 1941

No. 9

In This Issue

Locomotive Operation Improved by Automatic Draft Control Page 338

F. S. Williams, President of the Locomotive Combustion Controls Corporation, in this article discusses the possibilities of this recently developed device and gives information on the road tests conducted on modern freight and passenger locomotives.

What Is the Life of a Crosstie? 342

The thirty-first annual report of the Chicago, Burlington & Quincy, covering its long-time series of tie tests, involving 23 species of wood, throws added light on this question, as set forth in this article.

B. & M. Watches Unfilled Orders 347

This article describes the manner in which the Boston & Maine keeps its store-keepers advised of changes in the time needed to get materials and orders outstanding—giving convincing proof of the growing shortage of materials for railway transportation.

EDITORIALS

Record Freight Performance—and How Earnings Are Shared.....	333
Simplified Semi-Automatic Signaling	335

GENERAL ARTICLES

After Defense Traffic Subsidies	337
Locomotive Operation Improved by Automatic Draft Control, by F. S. Williams.....	338
Sand Valve and Spout for Diesel Locomotives	341
What Is the Life of a Crosstie?.....	342
Examiner Would Modify D. & R. G. W. Plan.....	346
B. & M. Watches Unfilled Orders.....	347

COMMUNICATION 349

NEWS 350

FREIGHT OPERATING STATISTICS 360

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

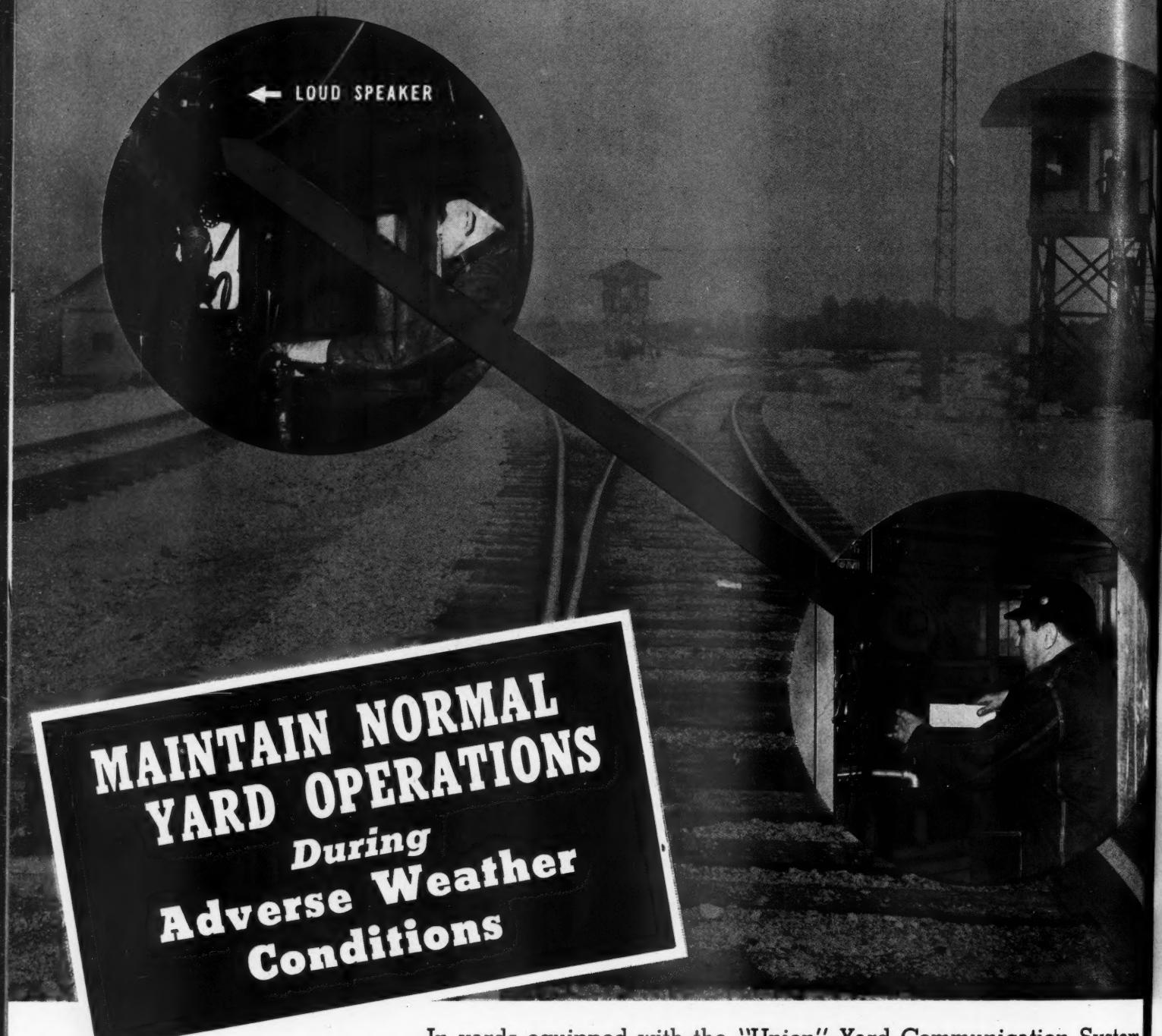


LOUD SPEAKER

MAINTAIN NORMAL YARD OPERATIONS During Adverse Weather Conditions

Features

1. Instructions are given directly in speech and acknowledgment by signal or voice is immediate.
2. Communication may be one-way or two-way, whether locomotives are in motion or standing.
3. One-way equipment is portable and may be quickly transferred from one locomotive to another.
4. One-way equipment can be converted to two-way by the addition of a few parts.
5. Communication is private.
6. The system is not subject to government radio regulation and no operating licenses or permits are required.



In yards equipped with the "Union" Yard Communication System, each locomotive can receive direct spoken instructions from the yard office at any time. Fog, smoke and other adverse conditions which may obscure the wayside signal indications, therefore, do not interfere with the safe and efficient operation of the yard facilities. Classification and yard switching are expedited. Information concerning every phase of routine or emergency movements reaches instantly the place where action is required. Rolling stock and motive power are used to maximum advantage.

Experience with installations on several railroads has demonstrated the usefulness of the "Union" Yard Communication System in meeting modern railroad problems in classification yards.



UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK

CHICAGO

ST. LOUIS

SAN FRANCISCO

Record Freight Performance — and How Earnings are Shared

The railway situation is, of course, always changing, but the present situation is widely different from any that ever existed before. It will surprise even most of those connected with the industry to be told that the railways probably rendered more freight service in the first two-thirds of 1941 than in the first two-thirds of any other year in their history. The previous first two-thirds of a year's record was made in 1929. The number of cars loaded was 22½ per cent less in the first two-thirds of 1941 than in the first two-thirds of 1929; but because of the radical change in conditions that has occurred, especially owing to the defense effort, carloadings have ceased to be a reliable measure of the amount of service rendered. The true measure, when it becomes available, always has been the number of tons carried one mile, because it represents not only the amount of freight loaded, but also the distance it has been carried. Up until 1933, carloadings and ton-miles rose and fell in close parallelism. Since 1933, as

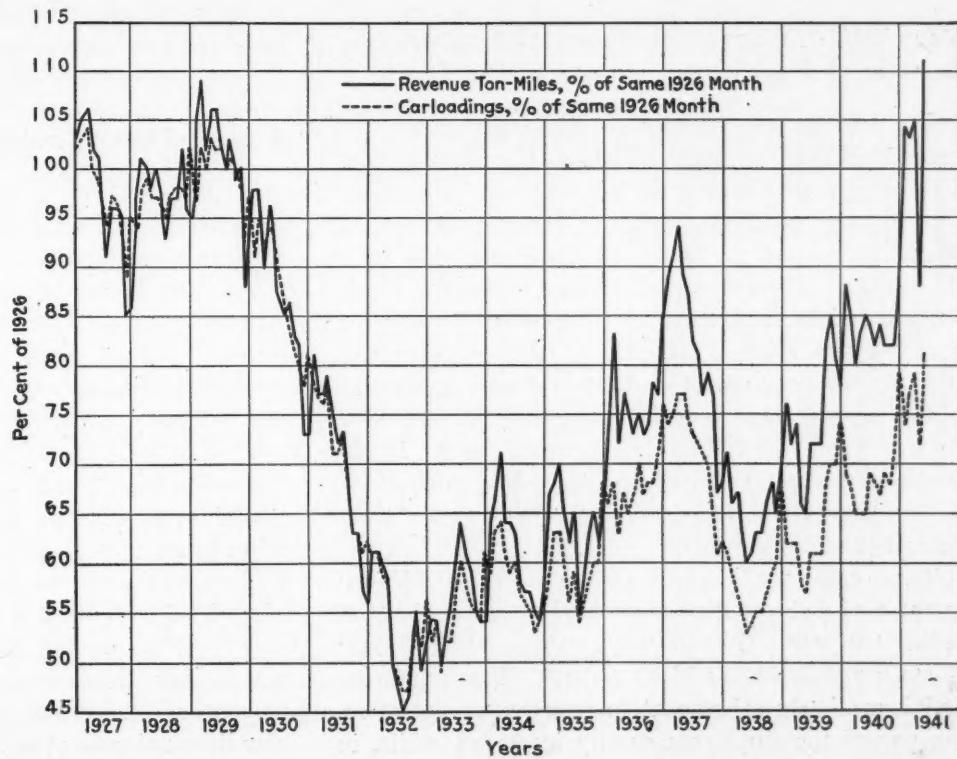
the accompanying chart discloses, ton-miles have shown an increasing "spread" above carloadings.

Tons Are Less Than in '29, But Ton-Miles Are Greater

While statistics of carloadings are available for the first eight months of 1941, statistics of ton-mileage are available for only the first five months. However, there are data available which make it practicable pretty accurately to estimate ton-mileage for June, July and August; and estimates based on these data indicate that the number of tons carried one mile in the first two-thirds of 1941 exceeded 297 billion as compared with somewhat more than 294 billion in the first two-thirds of 1929. How great this achievement has been is indicated by the fact that on July 15, 1929, there were on the lines of the railways 2,075,706 freight cars in good order, while on July 15, 1941, there were on line

Ton - Miles Are Advancing Far Ahead of Carloadings

Revenue Ton-Miles and Carloadings Shown in Percentages of Same 1926 Month



only 1,551,204 railroad-owned cars in good condition—a difference of almost 525,000 cars, or 26 per cent.

Freight earnings have been less than in 1929 because the average freight rate has been lower. Average revenue per ton-mile in the first five months of 1929 was 1.076 cents and in the first five months of 1941 .956 cents, or 11 per cent less. Consequently, freight revenue in the first six months of 1929 was $2\frac{1}{3}$ billion dollars and in the first half of 1941 only 2 billion dollars.

The railway labor leaders repeatedly have emphasized the fact that the railways are now earning net operating income at a rate of a billion dollars a year. The figures

spite of the government financial guarantees, net income available for dividends, and also dividends actually paid, were substantially less than in the preceding decade. During the ten years 1921-1930, inclusive, the average annual pay of employees was \$1,664, average net income per share was \$7.23 and average dividends per share were \$4.99. That is, as compared with the decade preceding government operation, the increase in employees' average pay was 111 per cent, while the increase in average net income per share of stock was 15 per cent and the increase in average dividend per share was 10 per cent. Certainly it cannot be said

	Average annual pay of Employees	Per cent increase over 1908-1917	Average annual net income per share of Stock	Per cent increase (or dec.) over 1908-1917	Average annual dividend per share of Stock	Per cent increase (or dec.) over 1908-1917
Ten years 1908-1917, inclusive	\$787		\$6.31	...	\$4.55	...
Three years 1918-1920, inclusive	1,582	101.0	5.35	-15.2	3.80	-16.2
Ten years 1921-1930, inclusive	1,664	111.4	7.23	+14.6	4.99	+9.7
Ten years 1931-1940, inclusive	1,691	114.9	.82 $\frac{1}{2}$	-86.9	2.05	-54.9

given emphasize what a tremendous feat in handling traffic with a depleted supply of equipment they have had to accomplish in order to make net earnings at a rate which only equals the average net earnings they made in the ten years ending with 1930 during which, on the average, they handled substantially less freight traffic.

Labor leaders contend that employees should be allowed to share in the prosperity of the railways. On the same principle they should share in the adversity of the railways. The stockholders are the owners of the railways. Let us, then, review how employees and stockholders have, in the past, shared in both the prosperity and the adversity of the railways. Figures showing the facts for the thirty-three years ending with 1940 are given in an accompanying table.

Since 1908-17, Wages Have Risen 115 Per Cent; Earnings of Stock Have Declined 87 Per Cent

The average annual pay of employees in the ten years 1908-1917, inclusive, immediately preceding government operation during the last war was \$787. During the same decade the railways made an average of \$6.31 net income per share of stock and paid their stockholders in dividends an average of \$4.55 a share. During and for the six months immediately following government operation (January 1, 1918, to September 1, 1920) the government made the railways guarantees of the same average annual net operating income—945 million dollars—that they had actually earned in the three years ending with June 30, 1917. How, then, did employees and stockholders fare during the three years 1918-1920, inclusive?

The average annual pay of employees was \$1,582—an increase of 101 per cent over the average of the preceding ten years. Net income averaged \$5.35 a share of stock and dividends \$3.80 a share. That is, during and immediately subsequent to government operation, the pay of the employees greatly increased, while, in

that during that decade employees failed to participate fully in the railways' prosperity.

We come now to the depression years. How did employees and stockholders share the adversity of those years? In the decade 1931-1940, inclusive, employees' average annual pay was \$1,691; average net income per share was 82 $\frac{1}{2}$ cents; and average dividend paid per share exceeded net income, being \$2.05. The increase in employees' average annual pay was 115 per cent over 1908-1917; was 7 per cent over the three years of government guarantees, and was 1.6 per cent over 1921-1930. The decline in average net income per share was 87 per cent as compared with 1908-1917; 85 per cent as compared with the three years of guarantees; and 89 per cent as compared with 1921-1930. The decline in average dividends per share was 55 per cent as compared with 1908-1917; was 46 per cent as compared with the three years of guarantee; and was 59 per cent as compared with 1921-1930.

A Third of Stock Earnings Were Re-Invested

In the twenty-three years ending with 1930 net income averaged about \$6.20 a share and dividends about \$4.30, almost one-third of net income being withheld from stockholders and invested in the properties. In the depression decade, 1931-1940, dividends exceeded net income, because, while a few railways were earning enough net income to pay dividends, most were earning too little to pay them and many were incurring deficits.

The foregoing figures plainly show that the employees shared much more largely in the prosperity of the railways when they were prosperous than did the stockholders, and much less than the stockholders in their adversity during the depression.

If the only question affecting the wage advances was that of fair division of railway income between employees and stockholders, obviously the labor unions, in now demanding large advances in pay, would not have

a leg to stand on. A fair division of increasing earnings would require that the stockholders should receive the entire increase in net earnings until average net income and dividends per share had been restored to their pre-depression relationships with average pay per employee. If, then, net earnings (net operating income) should continue to be relatively as large throughout 1941 as they were during the first half of this year, how much would net income per share amount to? Net earnings in 1940 were 682 million dollars. If, as in the first half of this year, they were earned at an annual rate of 4.07 per cent on property investment they would amount in 1941 to about 1 billion 50 million dollars—an increase over 1940 of about 370 million. Other things being equal, this would increase net income from 243 million dollars in 1940 to 613 million in 1941, or to \$6.25 a share—as compared with an average of \$6.31 in the decade ending with 1917 when the average annual pay of employees was \$787, and \$7.23 in the decade ending with 1930 when the average pay of employees was \$1,664.

Stock Earnings This Year Not Excessive

The total increase in costs imposed upon the railways by the demands of the employees would be at least 900 million dollars which, of course, would much more than wipe out all their prospective net income in 1941. Suppose, then, that the employees should get one-half of what they demand. This would reduce the prospective net income to 163 million, or to only \$1.66 per share of stock. Suppose they got only one-third of it. This would reduce the prospective net income to 313 million dollars, or to \$3.19 a share. Suppose they got only one-fourth. This would reduce the prospective net income to 388 million, or to \$3.96 a share.

In view of the fact that during the depression the average pay of employees was higher than ever before, while net income per share of the stockholders' stock was smaller than ever before, and 89 per cent smaller than in 1921-1930, why should employees now be given advances in pay which, even if only one-fourth as large

as they demand, would make net income per share much less than either in the decade preceding government operation or in the decade following it?

The Public Interest in R. R. Earnings

It is plain that the employees cannot be given a substantial advance in wages without the railways being given a substantial advance in freight rates if the earning capacity of the railways prior to the depression is to be restored even when they are handling the largest freight traffic that they ever did. Why, then, in the public interest should the earning capacity of the railways be restored? For the simple and seemingly obvious reason that they require net earnings (net operating income) of at least a billion dollars a year to enable them to put and keep their properties in condition to handle the even larger traffic that they plainly will be called upon to handle during the years immediately ahead. Good and adequate railway service is plainly indispensable to successful continuance of the defense effort and to supplying civilian needs. The problem presented is not merely that of the railroads, but of the government and the people of the United States; and they cannot solve it in the interest of the entire people without letting the railways make indefinitely at least a billion dollars net operating income annually.

Simplified Semi-Automatic Signaling

The increased necessity for minimizing train delays occasioned by operation by time-tables and train orders or by manual block, on single-track lines handling a medium volume of traffic, points to the desirability of a simple arrangement by means of which semi-automatic signals can be used to authorize train movements. Such a system provides an effective and economical means for reducing the overall time of trains, because

Transportation Changes

The construction of new trunk petroleum pipe lines to the Atlantic seaboard, further technological improvements in aviation and the building of strategic highways for military reasons all point to intensified competition in both freight and passenger transportation after the war is over. It is also reasonable to expect increased rivalry for the railroads from an enlarged coastwise and intercoastal merchant fleet at that time, as well as a vast road building program to ease the shock of adjustment from a military to a civilian economy.

The most serious threat for the future, however, is the pressure from railway labor for heavy wage increases. These will make it more difficult than ever for the carriers to cover debt charges when the stimulus from the defense program no longer expands the volume of traffic, and competition from other forms of transport becomes more acute

than it has ever been. At that time, the transportation situation will resemble closely what it was in the depression years of the thirties, when many railroads were being forced into bankruptcy and a few were even confronted with the possible need of abandoning operations in part or whole.

The Transportation Act of 1940 contemplated the establishment of a board to study the problem as a whole, and report on broad policy questions. No time should be lost in inaugurating an intensive study of the whole problem, with special reference to post-war conditions. This board should have an opportunity at least to express its opinion of the consequences of the wage increase now being demanded by the railway labor unions, so that the public may learn what bearing it will have on the acute transportation problem that will face the country when the defense period has passed.

they can be advanced safely to make meets on close timing, as indicated to the exact minute by track-occupancy indications on the control machine located at a central point on a division.

During the last decade numerous extensive installations of centralized traffic control, including power switch machines and semi-automatic signals, have proved the advantages of directing train movements by signal indications which take the place of time-tables and train orders. Complete centralized traffic control of this nature should be installed wherever it can be justified by the number of trains being handled. The proposition for consideration in this discussion, however, has to do with more simple signaling arrangements of such character that semi-automatic signals for authorizing train movements can be justified economically, not only on much of the 38,600 miles of single track in the United States where automatic block signaling is now in service with time-tables and train orders, but also on a considerable proportion of the mileage not now equipped with automatic block but where train movements are authorized by manual block or by time-table and train orders.

Especially at this time, various considerations point to the desirability of changing much existing automatic signaling to semi-automatic signaling. Interpretations of certain regulations stipulate that the distance in which an engineman can see a signal, when approaching, can no longer be accepted as a part of the train-stopping distance. Furthermore, within recent years, the increased speeds and weights of trains have increased the train-stopping distances, with the result that the spacing between any two successive automatic signals of the three-aspect type, using conventional controls, must also be increased to this newer train-stopping distance. The use of overlapped controls and changes to make two successive signals display the Approach aspect in approach to a signal displaying the Stop aspect, are merely temporary expedients, which not only introduce train delays and decrease track capacity, but are undesirable because they violate the basic principles of signal aspects.

Another consideration is the fact that, especially with single track, interpretations applied to certain rules of the Interstate Commerce Commission require that, under certain circumstances, staggered intermediate signals must be spaced twice the train-stopping distance or other expedients, as mentioned previously, must be employed. Within recent months, therefore, studies have been made looking to the simplifying of signaling arrangements for passing tracks so that automatic signaling can be converted to semi-automatic signaling at an expenditure which can be justified on extensive mileages of medium-traffic lines. Investigations have been made looking to the use of only the four existing signals at a passing track that are now included in conventional automatic block. Independent signals, controlled individually, are needed, however, to direct trains to (1) move from one passing track

to the next, (2) enter a passing track, and (3) depart from such a track. Whereas the conventional centralized traffic control arrangement includes four semi-automatic signal "arms" at each end of a passing track, with each such group controlled independently of the other, one more simple arrangement omits the station-departure signals, thus leaving only three signals at each end of a passing track. This arrangement, in part, (i. e., omitting the station-departure semi-automatic signals) has been in service at three passing tracks on the Missouri Pacific since 1924. Where omission of the station-departure signals is not adaptable because of the desirability of bringing trains up to a passenger station while an opposing train is being moved from the next station, eight signals can be used, but the two station-entering signals can be automatic rather than semi-automatic.

The track lineups and routes used by through trains at a passing track on single track are such that, with either of the arrangements of six semi-automatic signals, all of them can be controlled as one group, which minimizes the apparatus required to control these signals from a central point on a division. Furthermore, indications of track occupancy of all main-track sections and an indication that a semi-automatic signal has been cleared, can be provided by an equivalent counterpart of the controls outgoing from the office. Switching moves can be handled in the same manner as now employed on numerous installations of semi-automatic signaling. Diagrams of these signaling arrangements, as well as discussions of circuits which could be used, were given in articles published recently in Railway Signaling and, therefore, are not repeated here. These schemes have to do primarily with the control of semi-automatic signals only, for use in connection with existing hand-thrown switches or oil-buffer spring switches at passing tracks. The circuits include provisions, however, such that power switch machines, if required later on account of adverse grades at some locations, can be installed and controlled without expensive additions to the control system between the central office and the field locations.

In view of the fact that semi-automatic signals, as used in such a project, normally display the Stop aspect, and opposing signals are so interlocked that only one can be cleared, head-on protection is thus provided independent of intermediate staggered signals. The intermediate signals can, therefore, be spaced to provide the most efficient operation of following trains, and, in some instances, enough intermediate signals can be removed to supply the requirements for additional signals at passing tracks. On practically all existing single-track signaling no additional line wires would be required for local line control circuits. On two existing installations the coded energy for controls between an office and the field locations is handled on the same line wires with telephone communications, and such an arrangement is to be used on a 93-mile project now under way on the Louisville & Nashville.

Therefore, if a well-constructed telephone train dispatching line circuit is in service, the controls between the central office and the signals at the passing tracks can be superimposed on these wires.

The additional equipment required to change from automatic block to semi-automatic signaling includes a control machine (to be located in a central office), a system of circuits and apparatus for transmitting controls from the office to the passing tracks, as well as new circuits and some new relays at the field locations.

For the reasons given herein, it would seem ad-

visable, therefore, for a railway to consider the desirability of changing over to semi-automatic signaling rather than of making extensive changes in existing automatic block signaling, because, even after making the required changes, the system would still require time-table and train-order operation. Furthermore, if train delays are excessive on those territories without automatic signal protection, where operation is by manual block or by time-tables and train-orders, the installation of simplified semi-automatic signaling may well be considered.

After Defense Traffic Subsides

Our July 12 article in this space commented upon the mysterious anomaly found in the gross and net earnings of trucks for the year of 1940, which as a whole and particularly in the Central Region, showed, contrary to the usual trend of peak loads in business, that operating expenses were increasing in a greater ratio than the operating revenues, thereby causing truck net operating revenue to remain almost static. The Central Region truckers were using these peculiar earnings as support for rate increases—to put their rates even more completely at the railroad level.

But earnings of the trucking companies for the first quarter of 1941 do not follow the strange 1940 pattern. Instead, an increase of approximately 25 per cent in tonnage and revenue for this period produced an increase of 129.8 per cent in net operating revenue; while an increase of approximately 12 per cent in gross in 1940 produced less than 1 per cent increase in net operating revenue. The Central Region results still seem to be lagging behind. Their revenues increased approximately 31 per cent—6 points more than the country as a whole—but their net operating revenue increased only 85.4 per cent—44.4 per cent less than the country as a whole.

If there was any unusual increase in the unit cost of truck equipment, labor and material items during 1940, it escaped our attention. Of course, there could have been an unusually large amount of maintenance and depreciation charged to this particular year or the increased net could have been absorbed by an unusual increase in general and administrative expense, but there is nothing apparent on the surface to justify these unusual increases.

For the year 1940 railroad operating revenues increased 7.5 per cent, but net operating revenue increased 12.1 per cent and net railway operating income (which is more comparable with truck operating income) increased 15.8 per cent. For the three months ending March 31, 1941, railroad operating revenue increased 16.8 per cent, net operating revenue 43.6 per cent and net railway operating income 73.9 per cent. For the 6 months period ending June 30, 1941, total railroad operating revenues increased 21.4 per cent, net operating revenue 49.7 per cent and net railway operating income 76.6 per cent.

Truck operating revenues increased 12 per cent in 1940 but truck net operating revenue increased

less than 1 per cent. For the quarter ending March 31, 1941, truck operating revenue increased 25.9 per cent but in anomalous contrast with 1940 their net operating revenue increased 129.8 per cent. Truck operating revenues are not available for the first six months of 1940, but, assuming that truck gross earnings will expand in the same ratio to their tonnage, they should show an increase of approximately 30 per cent in gross revenues and approximately 200 per cent in net operating revenue.

It seems obvious that had it not been for the increased capital goods tonnage, due to the windfall brought about by increased preparations for national defense, the railroads' net operating revenue would not today be equal to what it was even in 1939—but the *continued improvement in the motor carriers' position even before the added defense load began* indicates that the trucks would have continued to improve their position at the expense of the railroads without any addition from the defense load.

All of this seems to add up as follows: (1) The railroads are only able to show, temporarily, a fair margin of profit because of the defense traffic which is using up the carriers' normally-excess capacity; (2) this heavy volume of traffic will probably disappear when the defense effort subsides; (3) If the motor carriers are permitted to continue to increase their tonnage at the expense of the *cream traffic* of the railroads, the railroads will probably be so exhausted of their best revenue-bearing traffic at the end of the war as to make it very difficult for them to continue in private operation.

Nothing is ever static, the trend is either forward or backward.

The railroads appear to have an opportunity now, which may never be given them again, to so readjust their rate structure that they will regain their dominance in handling the country's normal peace-time business—a dominance which they have been steadily losing. It is within the railroads' power to take the opportunity to "pick and choose" away from the trucks.

This would mean that the railroads would insure themselves for the future of a much greater share of the country's total transportation business; and provide a profitable use, after the war, for the great additions they are now making to their transportation capacity.

Locomotive Operation Improved By Automatic Draft Control

Road tests on modern freight and passenger locomotives indicate the possibilities of recently developed device

By F. S. Williams

President, Locomotive Combustion Controls Corporation

THE statement has been made that many modern coal-burning locomotives waste as much as 25 per cent of the fuel they consume and that they cannot be worked to capacity. Certain difficulties such as cinder cutting, slagging of flue sheets and the plugging of front-end nettings and flues are encountered, the principal cause of which is believed to be the excess draft induced when locomotives are worked at or near capacity. Another difficult problem has always been to obtain the efficient combustion of the increased amount of coal required to supply a maximum steam demand.

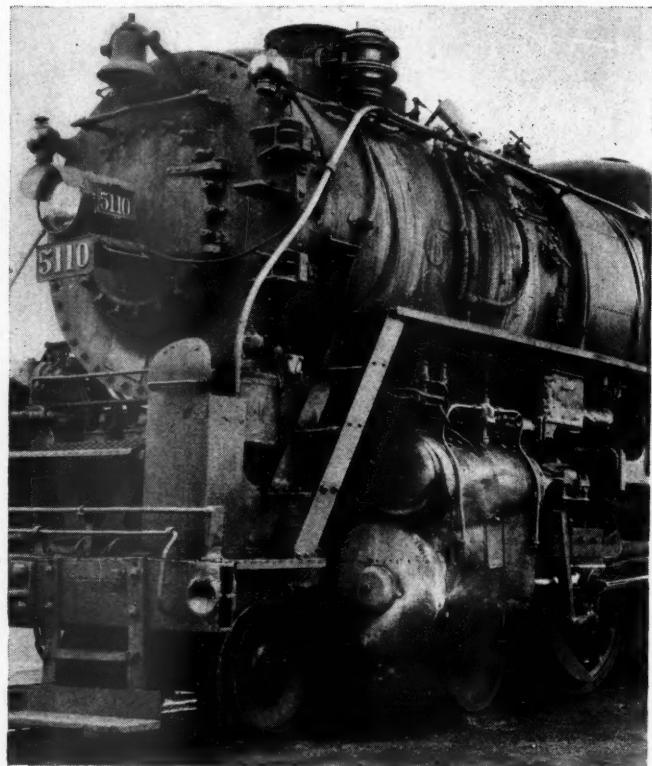
For over three years the Lehigh Valley has been carrying on experiments and road tests with an automatic draft-control device now being placed on the market by the Locomotive Combustion Controls Corporation, Providence, R. I., which is designed (1) to effect a reduction in the fuel burned for an equal amount of work done; (2) to eliminate stack losses and cinder cutting; (3) to improve combustion by maintaining a more uniform draft and the use of larger grate air openings, and (4) to reduce smoke throughout the operating range.

The Automatic Draft Control

The accompanying drawing shows the arrangement of this device and its application. The entire equipment is located at the front end and consists of an automatic, adjustable control valve located in a 6-in. pipe line leading from the exhaust passage to the atmosphere. The automatic control valve has a nest of vapor-cushioned, multi-ported spring-opposed valves which open at a predetermined pressure and remain open under all pressure conditions at or above that point. The action of this group of valves effects a reduction in back pressure on a graduated scale and the excess is bled off to the atmosphere. This valve is responsive to exhaust steam pressures and because of a retarded-action feature it does not register exhaust impulses.

The first locomotive equipped with automatic draft control on the Lehigh Valley was placed in service May 25, 1938, and since that time its use has been extended until at the present time 59 locomotives are so equipped. The 4-8-4 type locomotives on the Lehigh Valley, 27 of which are equipped, employ an 8½-in. exhaust nozzle with a cross spreader and stacks of 23½-in. diameter, measured at the choke. The grates are of the segment type and formerly had 18 to 22 per cent air opening.

The draft-control valves used on these locomotives start to open at a back pressure of from 5 to 6 lb. to relieve a portion of the exhaust steam to the atmosphere through the auxiliary exhaust passage. The valve remains open at this pressure and the opening is increased at higher exhaust pressures so that there is some build-up



The Front End of a 4-8-4 Type Locomotive Equipped With Automatic Draft Control—The Control Valve Is Seen At the Right of the Stack

of back pressure as the volume of exhaust steam increases. However, exhaust-steam or back pressure above this predetermined amount of 5 or 6 lb. is reduced about one-half. For example; a back pressure of 18 lb. would be reduced by one-half of the increase above 5 lb. Thus, a back pressure of 18 lb. is reduced to 12 lb.

Results of Road Tests

In the accompanying chart and in Table I may be seen the results of two tests made with a 4-8-4 type locomotive operating in the same direction under similar conditions, with and without the automatic draft control in use. The solid lines on the chart represent the performance of a locomotive with the automatic draft control operating and the broken lines indicate the performance of the same locomotive while the draft control was not operating. In connection with this chart it is significant to point out that the grate air openings in the former case were 19 per cent and in the latter case 30 per cent. Tests

made since the time these runs were made have resulted in increasing the grate air openings to 40 per cent.

Analysis of the chart will show the effect of variations in cut-off and throttle openings with reference to speed. It will be noted that in the 5.3 mile stretch at the left-

Table I—Comparison of Test Results on Two Runs of Lehigh Valley 4-8-4 Type Locomotive No. 5106

	Without draft control	With draft control	Per cent difference
Distance traveled, miles	87.3	87.3	0
Actual tons per train	3,196	3,116	-2.5
No. cars in train	70	72	+2.8
Atmospheric temperature	75	83	+10.7
Total running time, hr.-min.	2:21	2:17	-2.5
Total coal burned, lb.	24,262	18,564	-23
Total water evaporated, lb.	139,700	123,300	-11.8
Evaporation, lb. water per lb. coal	5.76	6.68	+15.9
Air openings in grates, per cent	19	30	+57.9
Coal burned per thousand gross ton-miles, lb.	87.16	68.40	-21
Average back pressure, lb.	10.35	6.43	-38.8
Average temperature at front end, deg. F.	473	448	-5.3
Average superheat temperature, deg. F.	611	585	-4.24
Average steam pressure in cylinders, lb. per sq. in.	184	172	-6.8
Average boiler pressure, lb. per sq. in.	240	243	+1.27
Cut-off, per cent (43-mi. run)	45.5	40.0	-12.0
Notches of throttle	24.31	21.57	-11.2
Average speed, m.p.h.	37.87	39.18	+3.5

hand end of the chart sudden demand for steam caused the firing rate to mount to 182 lb. per sq. ft. of grate per hr. Conditions such as this, where fuel is burned at a greater rate than 120 lb. per sq. ft. per hr., are likely to cause the locomotive to smoke. On locomotives using grates with restricted air openings, trailing smoke is usually encountered during light throttle operations because of the fact that the draft is reduced while an abnormal amount of fuel is being consumed in the firebox. The restricted air openings prevent a sufficient

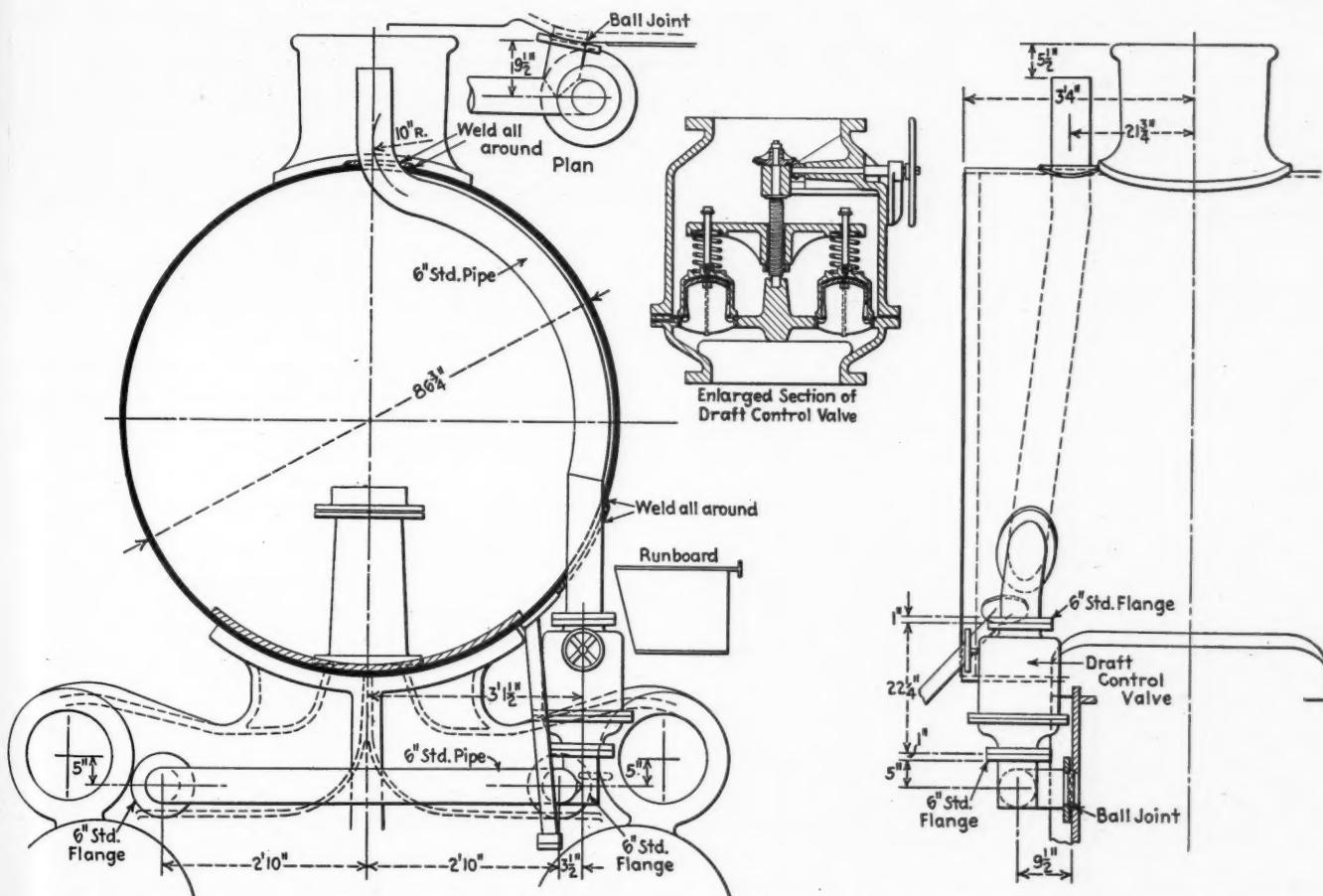
amount of air from being drawn into the firebox to complete combustion.

The curves representing coal consumption show some interesting comparisons between the two test runs. It will be noted that there was a decided drop in the amount of coal fired per hour on the run where the draft control was used. Attention is also directed to the 43-mile up-grade portion of the run with reference to the high and low points in the firing rate on the trip where the draft control was not used. Here the firing rate varied from a maximum of 267 lb. per sq. ft. of grate per hr. to a minimum of 57 lb. The effect of the draft control on the firing rate may be seen in the accompanying curve where the extreme high and low points were eliminated. The effect of larger grate air openings is also to be seen in that portion of the chart representing down-grade operation.

The Question of Back Pressure

The automatic valve will relieve a normal amount of exhaust steam volume, retaining about 5 to 6 lb. back pressure. However, at very high speed and full throttle opening there is a build-up to a maximum of 12 lb. Whenever an abnormal amount of steam is to be exhausted it reflects an abnormal increase in the firing rate or the amount of coal which must be burned. Obviously, therefore, more draft is required to induce a greater amount of oxygen to complete combustion. Since the draft is produced and influenced directly by the amount of back pressure, it is an advantage to employ an automatic valve which has a build up when abnormal amounts of steam are to be exhausted.

Reference to the chart will disclose that at Clifton Springs, the back pressure amounted to 21 lb. without



Automatic Draft Control Installation Where the Six-Inch Pipe Line Takes Exhaust Steam Directly from the Exhaust Passages of the Cylinders

the use of the draft control and 8.5 lb. while the draft control was operating.

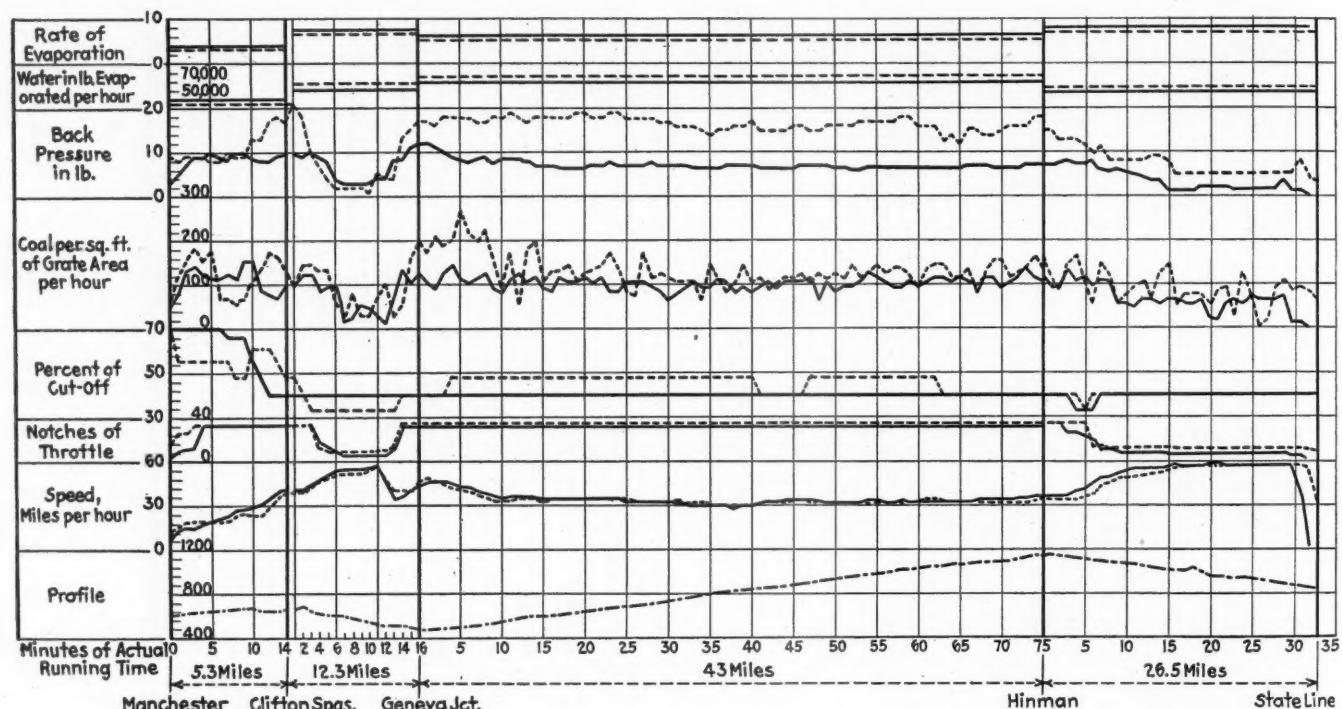
It will be noted in the 43-mile run that a maximum difference in the amount of back pressure was 12.5 lb. and that the average back pressure was 17.97 lb. without the use of the draft control and only 7.13 lb. on the run made with the draft control operating. This decrease of 10.84 lb. in back pressure indicates a marked increase in cylinder horsepower with live steam cylinder pressure practically equal. The increase in cylinder horsepower may be utilized to haul greater tonnages at equal speeds or equal tonnages at greater speeds, or if desired, equal tonnage at equal speeds and at the same time effect a substantial fuel saving.

The amount of vacuum produced is influenced largely by the amount of back pressure. However, it does not vary directly in proportion to the increase or decrease in back pressure, as it will be noted that in the range of high back pressure, less vacuum is produced per pound

of coal required in proportion to the amount of work done, also to the fact that, with the use of the automatic draft control which permits of much larger air openings in the grates, more oxygen can be drawn through the fire per inch of vacuum, due to the decrease in the restriction to its flow through the grates.

The presence of black smoke is invariably evidence of a lack of oxygen. The problem, therefore, resolves itself into one of inducing more air into the firebox. This can be done in one of two ways, either to increase the vacuum above the fire bed or to relieve the restriction to the flow of air so that more oxygen can be drawn through the fire with an equal amount of vacuum, or draft. The practice formerly has been to increase the draft above the fire and this principle seems to have been extended too far.

In order to meet the demand for speed and heavy tonnage, modern locomotives have been designed with high boiler capacities. Grate area, however, has been kept at



Test Results of Two Runs Made By Lehigh Valley 4-8-4 Type Locomotive No. 5106—The Broken Line Refers to a Run Made Before the Locomotive Was Equipped With Draft Control and the Solid Line Shows the Results With the Automatic Draft Control Functioning

of back pressure than is produced in the lower range. The chart will show that in the 5.3- and 43-mile sections, which represent up-grade operation where most of the coal is burned, a decrease of 33.39 per cent in back pressure brought about a decrease of only 25.26 per cent in vacuum in the former instance and, in the latter case, a decrease of 60.32 per cent in back pressure produced a decrease of only 42.73 per cent in vacuum. A slight reversal of this result is seen in the down-grade operation. In the 12.3-mile section the chart indicates that a drop of 5.66 per cent in back pressure produced a drop of 8.53 in vacuum and in the 26.5-mile section a drop of 16.39 per cent produced a drop of 19.49 per cent in vacuum.

Experience has shown that on several test trips, two of which are represented by the accompanying chart, when the draft control is not used considerable smoke is encountered, particularly on the downgrade, while on the trips made using the draft control, only a slight amount of light-colored smoke is seen on either the up- or down-grade. This is due to the decrease in the amount

a minimum. This fact has brought about the necessity of burning a large amount of coal per square foot grate per hour. This, in turn, required high draft. The difficulty is that locomotives have to be drafted in such a manner as to provide sufficient draft at low speeds and then they are over-drafted at the higher speeds. Heretofore, there has been no flexible means of controlling and adjusting draft.

During periods of over-draft fine coal is drawn out through the flues and stacks and the fire bed violently disturbed, causing a waste of fuel. The automatic draft control effectively corrects these conditions and certain of the tests have shown as high as 25.57 per cent saving in fuel, together with the practical elimination of the smoke and cinders.

Superheat Temperature and Front-End Temperature

The use of the draft control retards to some extent the velocity of gases passing through the flues and the other heating surfaces. This brings about a drop in superheat

temperature. On first consideration, this fact might be considered a detriment, however, in view of the potential economy in fuel and other advantages it may be that the slight loss of superheat can be justified. The drop in superheat temperature is compensated for by a corresponding drop in the percentage of front end temperatures. Reference to the chart during the 43-mile upgrade operation, will disclose that for the decrease in superheat, there was a corresponding drop in front end temperature. The decrease from 522 deg. to 475 deg. indicates an apparent decrease in heat loss through the stack. There may also be some advantage in bringing the superheat temperature below the flash point of the lubricating oil used in the cylinders and valve chambers.

Water Evaporated Per Hour and Rate of Evaporation

Reference to the chart will disclose that there is a reduction in the total amount of water evaporated per hour. This reduction in the demand on the boiler to do an equal amount of work amounts to 13.6, 11.38, 10.92 and 11.00 per cent on the four sections of the runs shown. Notwithstanding this decrease in the amount of water evaporated, the decrease in the amount of coal was sufficient to increase the rate of evaporation by 16.47, 11.62, 16.16 and 18.84 per cent. The increase in the evaporation rate, particularly on down-grade operation, reflects the benefit of the increased grate air openings and the resultant improved combustion.

Effect on Cinder Cutting Action

Cinder cutting is experienced to some degree on almost every locomotive worked at or near capacity, particularly on locomotives which carry more than 200 lb. boiler pressure. The availability of power has been affected by locomotives out of service for repairs on account of cinder-cut flues, Thermic syphons, superheater units and headers and parts of the draft arrangement, such as the netting, which is sometimes destroyed in a few weeks. In some cases it is so severe that stacks and stack extensions are cut away in from three to six months. Rivet heads in front-end door rings are often completely sheared off in a few months of service. Some relief has been afforded by applying shields to parts in the smokebox such as steam pipes, superheater headers and pipes leading to the feedwater heater. These shields at best cause further resistance to the proper movement of gases through the smokebox, necessitating the use of a smaller exhaust nozzle which in turn creates more draft. The use of draft control combined with larger percentage air opening grates retards gas velocities to such an extent that fine coal is not lifted from the firebed and thrown from the stack.

On the 27 4-8-4 type Lehigh Valley locomotives the replacements of superheater units has been reduced from an average of 15 to 20, 52-unit sets per year during 1936-38 to less than two sets each year during 1940-41. In the case of stack renewals the reduction was from 13 in 1937 to three in 1941. Stack extension renewals dropped from 20 in 1937 to three in 1941.

Slagging, Clinkers and the Plugging of Nettings and Flues

Slag is a chemical waste which coats the flue sheets and which is primarily drawn from the firebed by excessive drafts. If the locomotive can be made to steam better with less draft these conditions will be modified. Clinkers result from a fusion of ash. Regardless of the

fusing point of the ash in various coals, if the ash comes in contact with the high temperatures present in the firebox and those temperatures are above this fusing point, fusing will follow. Drafts which are strong enough to tear holes in the firebed or cause thin spots to form will cause a mixture of ash with live fire and form clinkers. Particles of ash drawn off the fire with the gases due to excessive drafts will fuse in suspension and contribute to slagging.

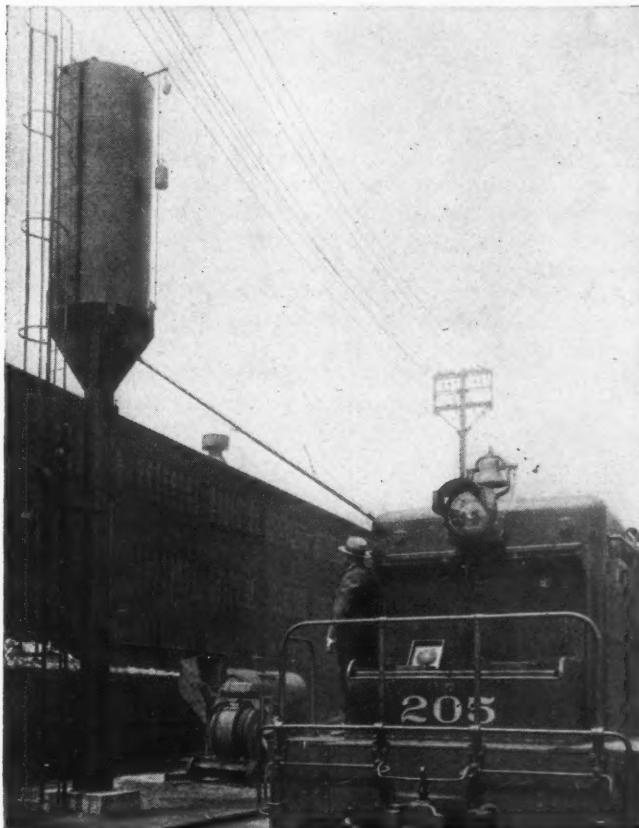
Effect on Locomotive Weights

The installation of draft-control equipment adds little to the locomotive weight because by increasing the air opening in the grates from 22 to 40 per cent on an area of 88 sq. ft. the weight of the grates is decreased by approximately 542 lb. The draft-control equipment adds approximately 660 lb. The reduction of the weight of the grates is of benefit to locomotives which have excess weight on trailer trucks. The weight of the draft control equipment is added at the front end of the locomotive.

Sand Valve and Spout For Diesel Locomotives

THE Ross & White Company, Chicago, is equipping dry sand storage bins with a new moistureproof sand valve and a special spout for the delivery of sand to steam or Diesel locomotives, including the delivery of sand to the inside box of Diesel locomotives lower down on either side of the engine.

The valve is a weatherproof under-cut valve protected
(Continued on page 346)



A Diesel Locomotive Taking Sand from a Sand Bin Equipped with the New Ross & White Sand Valve and Telescoping Spout



Ties Inserted Today, of Selected Woods and Treatments, Have Largely Increased Life Over Those of Earlier Days

OF approximately 25,000 treated and untreated ties that were installed in test tracks on the Chicago, Burlington & Quincy 31 years ago, more than seven per cent were still in service when the annual inspection of these tracks was made in the fall of 1940, although all of the untreated ties had long since been removed. Moreover, it is estimated that when the last of the test ties have been removed from the track, it will be found that the average service life in a number of instances will have been well in excess of 30 years, and in one case as high as 42 years. These facts, together with a large amount of other interesting data pertaining to a wide variety of tests with treated and untreated timber, are found in the thirty-first annual report on experimental forest products compiled by the superintendent of timber preservation of the Burlington.

Details of Tests

In 1909 and 1910, the Burlington installed a total of 24,874 experimental ties in its tracks at 23 different locations throughout the system. Usually 1,000 experimental ties were installed at each test location, and at least one of these tests was located on each operating division. Each installation consisted of 20 different species of timber, and the various species were subjected to different kinds of treatment; a number of ties of each species were also placed in track untreated. By following this procedure it was thought that, after a period of time, it would be possible to decide on the species of wood and the kind of treatment that would be the most economical for use under the varying traffic and climatic conditions that prevail at different points on the railroad.

What Is the Life of a Crosstie?

Thirty-first annual report of the Burlington covering its long-time series of tie tests, involving 23 species of wood, throws added light on this question

A wide range of hard and softwoods was used, including a number of species that are not ordinarily used for tie purposes, such as ash, cottonwood, elm, hickory, soft maple, poplar and sycamore. Other woods that were inserted in the test installations included beech, birch, chestnut, cypress, hemlock, loblolly pine, hard maple, white oak, red oak, pin oak, red gum, tamarack and tupelo gum. Ties made from each of these woods were subjected to three different preservative treatments, namely—straight creosote, the Burnett (zinc chloride) process, and the Card (emulsion of creosote and zinc chloride) process.

Test Results

In the annual report on these tests the results are published separately for the Lines East and the Lines West of the Missouri river, the two grand divisions into which the railroad is divided, and are summarized in Table I. Combining the figures for the two regions, it is apparent that of the 24,874 ties that were originally installed, 23,083, or about 93 per cent, have been removed due to all causes. It is of interest to note that, while practically all of the Burnettized ties and more than 94 per cent of those treated by the Card process have been removed from the tracks, only slightly more than 73 per cent of those treated with straight creosote have been taken out of service. Using a curve developed by the Forest Products Laboratory, the railroad estimates that the average service life of the creosoted ties in the test tracks will be 28.5 years on the Lines East and 29.5 years on the Lines West. The status of the test installations on the Lines East is given in more detail in Table II.

It is pointed out in the report that the creosoted ties

installed in these tests were treated in February and March, 1909, and that the amount of creosote used amounted to 15.72 lb. per cu. ft. for the ties treated in February and 8.62 lb. per cu. ft. for those treated in March, an average of 11.47 lb. per cu. ft. for all ties. Since several species of wood were treated in the same charges, and when consideration is given to the difference in the volume of treatable wood in the various species, it

ing the life that may be expected of creosoted ties when treated with the quantities of preservative that are generally used today.

Other Experiments

Aside from the test tie installations that were made in 1909-10, the Burlington now has under observation a large number of other experiments with treated and untreated wood, including, in addition to ties, bridge and building timbers and poles. There are approximately 200 such installations, each of which is inspected annually by the superintendent of timber preservation in the company of local and district maintenance officers, the results of these inspections being incorporated in the annual report, largely in the form of a tabulation for each test installation. This tabular material is supplemented by a written report, which not only discusses the results of the different tests but also contains other interesting information regarding the company's experience with, and practices pertaining to, the use of treated and untreated timber.

As a result of the observation of many ties in its own tracks and those of other roads, this road has come to the conclusion that red oak ties, bored, adzed, and treated with a sufficient quantity of preservative and properly protected with adequate tie plates, have a longer life than ties made from any other species of wood. Regarding untreated ties, it was stated in the report that an average life of 10 years was secured when all the ties being used were untreated. However, it also pointed out that white oak, cedar and heart pine were used principally at that time. The average life of all untreated ties in the 23 experimental tracks was 5.6 years.

In a discussion of gum ties it was stated that while the company has had some rather unsatisfactory results with such ties, it is felt that satisfactory results can be secured with black gum ties if they are properly cared for from the time they are produced until they are inserted in the track. This proper care, it is said, includes the immediate removal of the ties from the woods after cutting, their prompt inspection and movement in open-type cars to the treating plant, and careful observation

Table I—Summary of Test-Tie Installations

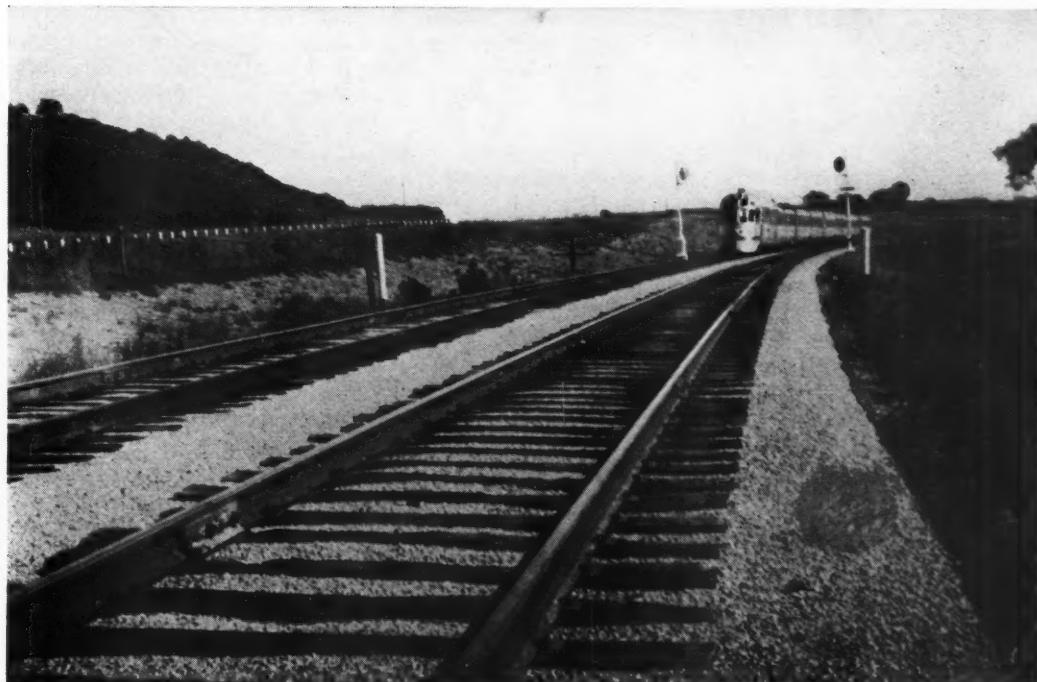
Process	Total placed	Total removed to date	Percentage of original ties removed			Average Life-Years	
			By reason of decay			All causes to date	Actual date
			Other causes	All causes	Estimated*		
Lines East							
Straight creosote...	2,046	1,538	26	49	75	24.2	28.5
Card	10,241	9,680	35	60	95	19.1	
Burnett	1,578	1,571	55	44	99	16.1	
Untreated	2,046	2,046	90	10	100	5.4	
Total treated	13,865	12,789	36	57	93	19.5	
Grand total	15,911	14,835					
Lines West							
Straight creosote...	1,236	871	17	53	70	22.7	29.5
Card process	5,591	5,244	35	59	94	18.0	
Burnettizing	910	907	49	50	99	15.0	
Untreated	1,226	1,226	91	9	100	5.8	
Total treated	7,737	7,022	34	57	91	18.4	
Grand total	8,963	8,248					

* Based on curve developed by Forest Products Laboratory. Estimated service life given only where not more than 90 per cent of the ties have been removed.

is apparent, says the report, that there was a considerable variation in the absorption of creosote as between different species. This is especially true in view of the fact that all of the ties were treated by the full-cell process, which was in general use at that time.

In fact, it is quite possible that some of these ties may have absorbed as much as 25 lb. of creosote per cubic foot of wood, a quantity, which as pointed out in the report, cannot be justified in treating any kind of wood. It is concluded, therefore, that insofar as the straight-creosote treatment is concerned, the studies in progress on the Burlington will give the results that may be secured with well-treated creosoted ties, but for some species they will not be particularly helpful in determin-

The Many Years of Tie Studies on the Burlington Are Reflected in the High Standard of Its Tracks, With Minimum Tie Costs



of the ties during the seasoning period, with the thought that, if infection should develop before they are thoroughly seasoned, the ties should be subjected to artificial seasoning and, prior to treatment, the ends should be sawed off to enable the interior of the ties to be inspected. After this inspection those ties that are found to be infected should be degraded, those in advanced stages of decay being destroyed or used for some other

is still necessary to contend with compression wood as it has not been possible to eliminate the purchase of western yellow pine trees containing this characteristic. It is explained that compression wood usually occurs on the top surfaces of ties, where the longitudinal shrinkage may be ten or fifteen times as great as at the bottoms of the ties, thereby setting up extraordinary stresses. In view of this fact western yellow pine ties containing

Table II—Status of Test Tie Installations on Lines East

Species	Untreated			Card Process			Burnett Process			Creosoted			Aver. life years*	Estimated life—years†	
	Decay	Other causes	Aver. life years*	Decay	Other causes	Aver. life years*	Decay	Other causes	Aver. life years*	Decay	Other causes	Card process	Burnett process	Creosote process	
Ash	99	1	5.1	21	77	18.9	44	56	18.3	32	68	16.7	..	..	..
Beech	98	2	4.6	47	56	17.7	56	43	16.0	16	36	27.2	..	..	33.5
Birch	99	1	3.6	42	55	18.2	48	52	13.0	72	27	22.9	..	..	..
Chestnut	28	72	9.4	18	82	10.1	..	..	..	..	..	..	..	..	..
Cypress	79	21	8.8	13	80	19.7	12	88	21.6	8	76	26.5	..	..	26.5
Elm	91	9	4.8	32	58	21.8	50	48	18.9	36	39	24.8	25.0	..	28.5
Gum-red	97	3	3.8	44	46	19.4	67	33	11.6	36	42	21.2	25.0	..	27.5
Gum-tupelo	98	2	3.0	27	51	23.0	47	52	15.2	28	51	27.7	27.5	..	27.5
Hemlock	100	..	4.7	30	66	18.4	48	52	17.3	33	61	20.1	..	..	..
Hickory	89	11	5.5	32	67	16.3	22	67	21.7	20	60	25.2	..	25.0	27.5
Maple—hard	98	2	4.3	46	43	20.9	52	48	19.6	56	30	24.7	25.5	..	26.0
Maple—soft	99	1	3.4	51	43	17.3	64	36	13.4	51	45	19.8	..	..	..
Oak—pin	96	4	6.4	27	66	21.8	57	35	22.6	8	58	26.5	..	..	30.5
Oak—red	96	4	5.1	27	68	20.1	56	44	17.2	10	63	25.6	..	..	29.0
Oak—white	88	12	10.8	39	60	17.2	60	40	17.4	16	56	27.2	..	..	28.5
Pine—loblolly	99	1	5.5	31	62	19.7	74	26	12.4	12	63	24.4	..	..	28.5
Poplar	94	6	5.1	44	54	15.5	44	56	14.3	18	60	24.0	..	..	27.5
Sycamore	98	2	2.9	53	35	20.0	71	29	13.7	39	27	24.7	..	25.5	30.5
Tamarack	96	4	4.9	22	77	18.1	44	56	18.1	15	77	21.7	..	..	..

* Actual to date.

† See explanatory note for Table I.

purpose. Finally, when gum ties are treated, they should be impregnated with a sufficient quantity of preservative to insure long life.

Results Are Questioned

Referring to two test installations of Douglas fir ties treated with zinc chloride, in which the ties had average service lives of 19 and 21 years, respectively, the report stated that under normal conditions such ties cannot be expected even to come close to equalling these service records. This is due to the fact that the test ties were larger than the fir ties now being obtained, and, in the opinion of the superintendent of timber preservation, they were favored by the track forces. In the territory that is normally supplied with fir ties, it is estimated that the maximum average service life that can be expected from such ties treated with zinc chloride is 16 years. The present practice of the road is to bore, adze and incise Douglas fir ties prior to treatment and to treat them with a 50-50 creosote-petroleum mixture, giving a net retention of 8 lb. of preservative per cubic foot. It is estimated that fir ties processed in this manner will give an average service life of 23 years.

During recent years the Burlington has experienced an unusual number of failures of ties in its main-line tracks between Denver, Colo., and Oxford, Neb. An inspection of these ties revealed that those in the poorest condition were made from western yellow or ponderosa pine, probably grown in the Black Hills, which were treated with zinc chloride. Many of these ties were installed in the track in 1928, and an inspection made in 1934 showed that they were cracked across the grain and shelled across the top surface. It is thought that the failure of these ties was due to a combination of circumstances, the most important of which appears to be the presence of pronounced compression wood at or near the upper surfaces of the ties.

While the other apparent causes contributing to the failure of these ties have now been largely eliminated, it

pronounced compression wood are now bored and adzed in such a manner that the compression wood is on the bottom, although this necessitates placing the ties in track with the heart sides up. To determine the effectiveness of this expedient, a number of test installations have been made.

Experience With Southern Pine

Describing the company's experience with premature failures of southern pine ties treated with zinc chloride alone and by the Card process (1/2 lb. zinc chloride and 3 lb. creosote per cubic foot of wood), particularly in territory adjacent to the Mississippi and Missouri rivers, where the rainfall is slightly in excess of 45 in. annually, the report said that an investigation had revealed that there was very little preservative left in the treatable wood. Hence, it was concluded that insufficient quantities of preservative had been used. As a result of this investigation, the standard treatment for southern pine ties was changed in 1928 from the Card process to the Reuping process, involving the injection of 5 lb. of straight creosote per cubic foot of wood.

After a number of years experience with southern pine ties treated by the latter process it was concluded that, while a treatment calling for 5 lb. of creosote per cubic foot of wood is superior to the Card process, that quantity of creosote used is not sufficient to permit the fullest possible benefits to be obtained from the preservative treatment of this species of wood. It is believed that satisfactory results can be secured with southern pine ties if they are given the same care as outlined for gum ties and if they are given the road's present standard treatment, which calls for the injection of 8 lb. of a 50-50 creosote-petroleum mixture per cubic foot of wood.

A section of the report was devoted to a discussion of the factors that influence the life of ties. Satisfactory results, it was said, can only be attained by (1) the use of sound ties properly manufactured, (2) proper seasoning, (3) proper treatment, (4) boring and adzing, (5)

the use of the right tie in the right place, and (6) the use of tie plates of the proper size to prevent the cutting of the ties. Because of the extensive spiking which it requires, causing excessive splitting of the ties, the use of shims as a means of controlling heaving was mentioned as an adverse factor in influencing the life of ties.

For the five years from 1935 to 1939, inclusive, ties were renewed on the Burlington at the average annual rate of 143 per mile, which would indicate an average life of 22 years. Regarding this figure, the report says that "when it is considered that 10 per cent of the ties in our tracks were treated with zinc chloride, which it is estimated would give an average life of 16 years, about 60 per cent were treated with the Card process, giving an estimated average service life of from 18 to 19 years, and less than 29 per cent were treated with the present standard of 8 lb. of creosote-petroleum mixture per cubic foot, giving an estimated average life of 23 years, it would seem that our present average annual renewals should be made on the basis of an average life of 19 years, or 162 ties per mile. Therefore our average renewals for the last five years have been very conservative."

The company has continued its experimental work involving the treatment of semi-seasoned and green oak ties with its standard creosote-petroleum mixture, and as a result of this work it is now treating semi-seasoned oak ties only when necessary to take care of immediate requirements. The performance of these ties in service will be observed, but at the present time it is still felt that the most satisfactory method of processing oak ties is to air season them before treatment.

In reporting on experimental installations of Douglas fir and oak switch ties placed in adjacent switches at four different points on the system, the report said that the fir ties have become plate cut to a greater extent than the oak ties and that they do not hold the track to gage, the application of gage rods to the rails frequently being necessary. In this connection, it was stated that "undoubtedly considerably longer life will be secured from the oak switch ties than from the fir switch ties."

Tests With Z. M. A.

In 1934, the Burlington made three experimental installations of telegraph poles treated with zinc meta-arsenite and, as a result of inspection of the poles in these installations, it was concluded that "long life can be anticipated from telegraph poles treated with Z. M. A." This preservative has also been employed since 1933 in treating all timbers, with the exception of sill blocks which are creosoted, that are used for replacement purposes in the repair of the timber linings in three tunnels between Guernsey and Wendover, Wyo. This policy was adopted "after giving careful consideration to the short life secured from untreated material and also to the possible fire hazard if creosote-treated material were used."

Termite Problem

Turning to a consideration of the termite problem, the report listed a total of 55 different points on the railroad, located in seven states, at which the presence of termites has been noted. Two instances were described in which termite-infested structures were treated in an effort to rid them of the insects, with apparent success in both cases. In one instance the damaged members in a freight house were removed and replaced with timber treated partly with Z. M. A. and partly with a creosote-zinc chloride mixture, while in the other instance a passenger

station was treated by a termite-eradication concern. To exclude termites from new buildings, the following recommendations covering construction details were offered:

(1) No untreated wood should be used in foundations, and basement or cellar walls should be of concrete.

(2) Cement mortar should be used in masonry foundations.

(3) All masonry foundations should be capped with concrete or cement mortar and slate.

(4) Metal mechanical barriers should be placed over the foundation walls.

(5) Proper ventilation and screening of all ventilation openings and doors should be obtained.

(6) All wooden forms on foundations should be removed from masonry work within 15 days; grading stakes should be removed before the concrete is placed.

Recommendations were also presented for the treatment of existing structures in which termites have been located. These include the replacement of all wood in contact with the ground with treated wood; the provision of adequate ventilation; the closing of all openings in walls, foundations and basement floors, regardless of the type of materials used in their construction; and the removal of all wood debris from beneath and around the building.

Improved Practices

As a result of the improvements in the production, treatment, handling and use of forest products that have been placed in effect on the Burlington in recent years, it is felt that the service life of such products will be materially increased, although it is expected that it will be some time yet before full benefits are realized. In part, these improvements are as follows: Extension of the railroad's influence into the production field; regulation of deliveries of untreated ties to the treating plants, with the result that they can be handled most advantageously from every viewpoint; ability to so regulate the treating program that ties are treated when they are ready; development of the practice of painting all the bearings of hardwood ties to prevent stack burns and decay during the seasoning period; boring and adzing all ties prior to treatment; incising fir ties and lumber before treatment; the more extensive use of anti-checking devices; bolting or dowelling badly split ties; use of more and better-designed tie plates; and the pre-boring, framing and surfacing of bridge lumber prior to treatment.

The 23 experimental installations of ties described at the outset of this article were made by the late F. J. Angier. After Mr. Angier severed his connection with the road, the late J. H. Waterman had supervision over them until his retirement as superintendent of timber preservation in 1927. Since that date all experimental installations have been made by Mr. Waterman's successor, H. R. Duncan, who prepared the annual report on which this article is based.

THE PENNSYLVANIA HAS TRANSPORTED over 380,000 selective service men from their home cities and towns to various training camps since the beginning of the year. Involved in the movements were 859 special trains, beside large numbers of extra cars on regular trains where the numbers of selectees were not sufficient to require the operation of an entire special. During this period, an average of 12,300 selectees has been carried per week and the number of special trains operated for them weekly has averaged 28. The heaviest week was that ending March 29, when 41 special trains were operated and 18,843 selectees were carried.

Examiner Would Modify D. & R. G. W. Plan

WASHINGTON, D. C.

Finance Examiner M. S. Jameson of the Interstate Commerce Commission has recommended a further modified plan of reorganization for the Denver & Rio Grande Western, designed to meet the objections of the federal district court in Denver, which would increase the capitalization of the reorganized company from the commission's previous figure of \$147,433,354 to \$169,185,052. Also, under the proposed modified plan, the commission's former annual fixed charges of \$1,350,000 would be upped to a new figure of \$1,974,226, while Mr. Jameson would have the commission retain the provision to wipe out the equities of the preferred and common stockholders. Details of the commission's former plan were given in the *Railway Age* of August 5, 1939, page 222.

Judge Sends Plan Back

The commission's final plan was made public on July 29, 1939, and modified on April 2, 1940. After the plan was certified to the federal district court in Denver and hearings had been held, the judge, on December 6, 1940, criticized the commission plan and later sent it back to the commission for further consideration. Hearings were held by the commission on May 20, and the proposed report of Examiner Jameson is based on the further record adduced at that time.

Under the proposed plan, the effective date of which would be January 1, 1942, the Denver & Salt Lake would be consolidated with the debtor company only in the event the holders of at least 66 2/3 per cent of the Denver & Salt Lake income bonds voluntarily accept an extension of the maturity date of the bonds to that of the first mortgage bonds issued by the new company, and to a modification of interest on the Denver & Salt Lake income bonds to provide for four per cent fixed interest and two per cent contingent interest.

Capital Structure of New Company

Under the recommended plan, the capitalization of the new company, on the basis of a consolidation of all the affiliated companies, including the Denver & Salt Lake, would be as follows:

Equipment obligations, undisturbed	\$8,254,825
Chase Nat. Bank note, extended	2,068,458
R. R. Credit Corp. note, extended	268,953
Loan for new money, approximately	6,000,000
New first-mortgage bonds	34,579,366
New income bonds	34,925,295
D. & Salt Lake first-mortgage bonds	1,500,000
D. & Salt Lake income bonds, modified	9,734,000
 Total debt	\$97,330,897
New Preferred stock	29,013,585
New no-par common stock, taken at \$100 a share	42,840,570
 Total	\$169,185,052

Based on this capital structure the annual charges would be substantially as follows:

	Fixed	Prior	Contingent	Preferred	Dividends
Equipment obligations	\$195,000				
Chase Bank note	49,835	\$16,612	\$16,150		
R. C. C. note	2,690				
Loan for new money, approx	240,000				
New first mtge. bonds	1,037,381	345,794			
D. & S. L. first mtge. bonds	60,000				
D. & S. L. income bonds	389,360	194,680			
New income bonds			1,571,638		
Preferred stock				1,450,679	
 Totals	\$1,974,226	\$557,086	\$1,587,788	\$1,450,679	
Capital fund, maximum payment			750,000		
Sinking fund for first mtge. bonds			172,897		
Sinking fund for income mtge. bonds			87,313		

The holders of bonds of the classes shown below would receive for each \$1,000 bond and all unpaid interest thereon, as of the effective date of the plan, the following amounts of new securities:

Rio Grande Western first-trust bonds, \$728.77 of new first-mortgage bonds and \$551.23 of new income bonds; Rio Grande Western consolidated mortgage bonds, \$322.50 of new income bonds and \$967.50, par value, of new preferred stock; Junction first-mortgage bonds, \$757.63 of new first-mortgage bonds and \$571.54 of new income bonds; Denver & Rio Grande consolidated mortgage 4 per cent bonds, \$260.00 of new first-mortgage bonds, \$260.00 of new income bonds, \$260.00, par value, of new preferred stock, and 5.2 shares of new common stock; Denver & Rio Grande consolidated mortgage 4 1/2 per cent bonds, \$267.50 of new first mortgage bonds, \$267.50 of new income bonds, \$267.50, par value, of new preferred stock, and 5.35 shares of new common stock; the debtor's refunding and improvement 5 per cent bonds, \$272.50 of new first-mortgage bonds, \$272.50 of new income bonds, \$272.50, par value, of new preferred stock, and 5.45 shares of new common stock; the debtor's refunding and improvement 6 per cent bonds, \$287.00 of new first-mortgage bonds, \$287.00 of new income bonds, \$287.00, par value, of new preferred stock, and 5.74 shares of new common stock; the debtor's general mortgage bonds, 4.69 shares of new common stock.

R. F. C. to Get Bonds

The Reconstruction Finance Corporation would be entitled to receive, in full settlement of its notes, new first-mortgage bonds equal to 57 per cent of the claim and new income bonds equal to 43 per cent.

A notice signed by Secretary Bartel and attached to the report states that exceptions to the proposed plan must be filed with the commission and served in time to reach counsel of record within 45 days from the date of the issuance of the plan, August 26. Replies to exceptions may be served within 10 days of the date for filing exceptions. The case is assigned for oral argument before the full commission in Washington, D. C., on November 6 and 7.

Sand Valve and Spout For Diesel Locomotives

(Continued from page 341)

by a weatherproof housing, which is mounted under the dry sand storage bin. It is connected to an unusually long telescoping spout, balanced by counterweights, which operate on counterweight guides provided with spring seats. Because of its length, the spout requires a counterweight of about 190 lb. In order to provide for easy operation in spite of the heavy counterweights required, a double counterweight system is provided, with a heavy counterweight balancing the upper or inside section of the spout and a lighter counterweight slightly heavier than the outside or lower telescopic section of the spout balancing that portion.

A short section of flexible rubber hose is connected to the lower end of the spout.

It is said that the new type of spout is easily maneuverable with one hand and, because of its length, will reach all of the various positions that may be required to sand a Diesel locomotive. After sand has been taken, a slight push upward is all that is required and the spout returns to a position in the clear.

B. & M. Watches Unfilled Orders

Supply records give convincing proof of growing shortage of materials for railway transportation

IN purchasing its requirements of materials and supplies, the Boston & Maine has an organized plan for keeping storekeepers advised of changes in the time it takes to get materials and also keeps a record of its outstanding orders, which measures are not only proving particularly useful at the present time, with the increasing difficulty of getting supplies, but also clearly show the growing acuteness of the railway material situation throughout the country.

Unfilled Orders Increase

Despite the specialized attention which is given by the purchasing department to the preparation of each order for materials and the emphasis which is now being given to assure their delivery as required, the railroad had 2,200 more, or almost twice as many, unfilled orders outstanding on August 1 than on Aug. 1, 1940, and 273 more unfilled orders on August 1 than one month previous, while 355 of the orders outstanding on August 1 were 90 days or more old, as compared with 263 on July 1, 1941, and only 19 on Aug. 1, 1940.

The unfilled orders on August 1 included 3,009 orders less than 30 days old, as compared with 2,160 a year previous; 892 orders outstanding 30 to 60 days, as compared with 286 a year previous; and 480 outstanding 60 to 90 days, as compared with a 71 a year previous, while the orders outstanding over 90 days included 179 from 90 to 120 days old, 52 from 120 to 150 days old, 25 from 150 to 180 days old, 4 from 180 to 210 days old, one from 210 to 240 days old, and 2 orders which were over 240 days old.

In the unfilled orders on August 1 were 659 for castings and small forgings and for paint and chemicals, of which 81 were 90 days or more old while 60 of the orders were for lumber and ties, of which 3 were 90 days or more old. The unfilled orders for bar steel, axles, wheels and electric and signal material, on the other hand, totaled 1,103, of which 105 or 10 per cent were 90 days or more old, while 79, or 8 per cent of 929 unfilled orders, were for hardware, machinery and for pipe and fittings and were 90 days or more old. In the total unfilled orders were also 729 for rubber products, track and building materials, of which 43, or about 6 per cent, were 90 days or more old, while 14, or .3 per cent, of 463 unfilled orders for station supplies, oils and waste, were 90 days or more old. There were no orders outstanding over 60 days for stationery and printing and there were only 138 unfilled orders for track materials on August 1, but 30 of these, or 30 per cent of the total, were 90 days or more old.

A Purchasing "Weather Chart"

These and other precise indicators of the flow of material to the railroad are obtainable at a glance from a statement which is prepared each month in the purchasing department. In this department are eight subdivisions, each in charge of all details involved in the purchase of assigned classes of material, and each of these subdivisions makes a complete check of its purchase orders

outstanding each month, divided between the number outstanding 30 days, 30 to 60 days, 60 to 90 days and over 90 days, the total number of orders issued during the month, the orders of each age on hand at the beginning of the month and also the orders of each age which were filled during the month, together with the increase or decrease in the total number of unfilled orders as compared with the previous month. This information for each subdivision is all entered on a single form, which also summarizes the figures and shows the corresponding summary for the year previous. This one statement thus serves as a purchasing "weather chart" for each buyer as well as for the management and is highly regarded as an aid in conducting the purchasing work of the railroad.

A Supply Time Table

Since the Fall of 1939, when the railroad began to experience increased difficulty in obtaining materials from manufacturers, each buyer has notified the general storekeeper of significant changes in the time required to obtain supplies whenever these changes are advised by

Purchase Orders Outstanding August 1

	Total	Under 30 Days	30-60 Days	60-90 Days	Over 90 Days
Castings, small forgings, etc.....	659	369	136	73	81
Lumber and ties	60	34	13	10	3
Bars, axles, wheels, etc.	1,103	566	283	149	105
Hardware, machinery, pipe, etc.	929	558	184	108	79
B. and B. material, etc.	729	414	177	95	43
Station supplies	463	374	52	23	14
Stationery and printing	655	642	13	..	..
Track material	138	52	34	22	30
SUMMARY					
Total August 1, 1941	4,736	3,009	892	480	355
Total July 1, 1941	4,463	2,947	829	424	263
Total August 1, 1940	2,536	2,160	286	71	19
Total July 1, 1940	2,309	1,966	240	92	11

manufacturers, and these changes have been brought to the attention of storekeepers as they occur and have also been applied to a record listing the successive changes in schedules for each class of material affected and the date of each change. With this time table of what to expect in deliveries, storekeepers of the railroad are better equipped to maintain an adequate stock of supplies than by reliance only on past consumption and previous deliveries.

The table shows that time changes involve over 70 kinds of materials and that the situation has become progressively worse with several important items. Underground cable and boiler tubes that were obtained in 45 days at the beginning of 1940, now require 240 days. The times to fill orders has been increased from 60 to 180 days in the case of copper tubing and sheets, while main rods must now be ordered 6 months ahead instead of 3 months as in October, 1940. Schedules for steel bars and plates have been extended from 4 months at the beginning of the year to 9 months or more at the present time and boiler tubes have been extended from 45 days in June, 1940 to 240 on July, 1941. According to the latest information of this road, 120 days must now be allowed for track bolts, 90 days for hexagon bolts and

rivets, 90 days for bar iron, 120 days for brake rods, 180 days for coupler yokes, 120 days for locomotive cylinders, 90 to 120 days for steel castings, 120 days for tires and steel wheels, 150 days for electric locomotive parts and from 180 to 540 days for machinery. On the other hand, the B. & M.'s time table on material deliveries up to the present show only 90 days for fence, 45 days for square-head bolts and 60 days for coil springs and 45 days for grey iron castings, 60 to 90 days for malleable castings, 30 days for journal bearings, 60 days for tinware, 30 days for welding wire and 90 days for air-brake and water hose.

No Bidders

The railroad requires approximately 15,000,000 bd. ft. of lumber a year, most of which originates in West Coast or Southern Pine territory, and the growing difficulty of getting this material, even at prevailing prices which range from 20 to 100 per cent higher than a year ago (commercial grades and sizes not accepted), is graphically indicated by the experience of the last few weeks when invitations to 40 of the largest mills for bids on 100,000 bd. ft. of 1-in. by 4-in. by 18-ft. kiln dried, dressed and matched, yellow pine lining of A. A. R. common grade, brought no quotations, and again, when inquiries for bids from 15 firms for 200,000 bd. ft. of 1½-in. by 6-in. by 10-ft. kiln dried, dressed and matched, Douglas Fir of No. 1 common grade, were also ignored. In the judgment of the Boston & Maine, repeated experiences of this kind have largely demonstrated the futility of relying on the time honored and theoretically ideal system of formal bids in purchasing lumber, and also many other materials at the present time, especially materials for the account of railroads removed from sources of supply, and is putting the resourcefulness of its buyers and users to a severe test. With lumber, the railroad is using more spruce from Eastern Canada and New England and resorting to other substitutions, both in species and dimensions, to supply its requirements, but is chiefly relying upon a comprehensive understanding of its uses of lumber and of mill practice in each producing area to protect its supply.

Substitutes and Priorities

In purchasing materials of iron and steel, the railroad has not been misled by the relatively unchanged level of base prices. Instead, notice has been taken of the facts that deductions from based prices are no longer available, that rigid adherence to recognized specifications is expected of buyers, that mills will not accept orders for less than 3 tons of some materials and 5 tons of other steel and that many materials must now be purchased in lots of not less than 20 tons instead of 3 tons to get base rates, and these and other factors are considered daily in negotiating for purchases, not only to avoid unnecessary increases in the cost of materials but also to avoid unnecessary interruptions in their delivery. It is particularly pointed out that each subdivision of the purchasing office has readily accessible information on the unit weights of materials ordered and these are constantly utilized to assure that carloads or other economical units are ordered from manufacturers. While extensive substitutions have not yet been required to replace materials of iron and steel which are most difficult to obtain, the railroad is not alarmed over the prospect of using Bessemer steel in place of open hearth steel for many purposes, and is seriously considering using fewer galvanized products.

The railroad's experience with priorities up to the present has been disappointing and it is hopeful that A-3

ratings for freight car and locomotive materials and A-10 ratings for other maintenance materials, and particularly the government's M-21 priority order on steel, will permit procurement on a more satisfactory and stable basis. This road may have to enlarge its force to avail itself fully of the priority ratings granted car and locomotive materials and materials for railway maintenance and repair, and intends to interpret the orders liberally until the railroads have been more successful than at present

Changes in Time Required to Purchase Material

	From	To		
	Days	Date	Days	Date
Track bolts	45	Oct. '40	120	July '41
Switch stand parts	60	June '41	90	July '41
Track nut locks	45	Oct. '40	90	June '41
Fence	45	Oct. '40	60	Mar. '41
Fence posts	45	Oct. '40	60	Mar. '41
Line wire, weatherproof	60	Oct. '39	45	Nov. '40
Signal housing	60	Oct. '39	90	Oct. '40
Signals, misc.	45	Oct. '39	60	Oct. '40
Underground cable	45	Oct. '39	120	Mar. '41
Battery renewals	45	Oct. '39	60	Apr. '41
Crane parts	90	May '41	120	May '41
Ball bearings	45	Oct. '40	60	Aug. '41
Hex. nuts	45	Oct. '40	90	Dec. '40
Rivets	45	Oct. '40	60	Mar. '41
Sq. bolts	45	Nov. '40	60	Mar. '40
Stay bolts	45	Oct. '40	60	Nov. '40
Springs, elliptic	45	Oct. '40	45	July '41
Boiler tubes	45	Jan. '40	240	Apr. '41
Copper	90	Jan. '40	180	Mar. '41
Engine bolts	45	Oct. '40	90	Apr. '41
Smoke box plate	180	Apr. '41	210	June '41
Steel bars	120	Dec. '40	210	June '41
Steel plate	120	Dec. '40	210	June '41
Steel sheet	180	Apr. '41	210	June '41
Steel, structural	45	Oct. '40	120	Jan. '41
Main rods	90	Oct. '40	180	July '41
Side rods	120	Nov. '40	180	July '41
Brake hangers	45	Oct. '40	90	Nov. '40
Crank pins	90	Feb. '41	180	July '41
Piston rods	90	Feb. '41	120	July '41
Drawbars	60	Nov. '40	120	May '41
Coupler yokes	60	Jan. '41	90	June '41
Pass. bushings	60	Jan. '41	60	Nov. '40
Mall. castings	45	Oct. '40	120	Mar. '41
Loco. cylinders	45	Oct. '40	120	Apr. '41
Driving boxes	45	Oct. '40	90	Apr. '41
Steel castings	45	Oct. '40	120	June '41
Wheel centers	45	Oct. '40	45	June '41
Grey iron castings	45	Oct. '40	60	June '41
Small brass castings	45	Oct. '40	30	June '41
Journal bearings	45	Oct. '40	75	Mar. '41
Air brake material	45	Oct. '40	90	June '41
Inspirators	60	Aug. '40	90	Mar. '41
Lubricators	45	Oct. '40	60	June '41
Whistles	45	Oct. '40	120	June '41
Pass. car trim	45	Oct. '40	45	Oct. '40
Weather strip	45	Oct. '40	60	Oct. '40
Elec. loco. parts	75	Oct. '40	150	Nov. '40
Axles, driving	45	Jan. '40	120	July '41
Tires	45	Jan. '40	120	July '41
Rolled wheels	45	Jan. '40	120	July '41
Machinery	180	Oct. '40	540	Oct. '40
Tin ware	45	Jan. '41	60	Feb. '41
Steel pipe	45	Oct. '40	90	Jan. '41
Nails	45	Oct. '40	120	July '41
Welding wire	45	Oct. '40	30	May '41
Boiler logging	120	Feb. '41	90	Feb. '41
Scrub brushes	45	Oct. '40	60	June '41
Paint brushes	45	Oct. '40	75	June '41

in removing the confusion over the meaning of terms which prevails among the administrators of the priorities as well as among railroads and manufacturers.

Freight Rates Studied

While the most pressing problem in the railroad's purchasing is that of getting materials, a problem which has been accentuated by the reductions which the National Defense and Lend-Lease programs have made in water borne commerce to the New England Coast, the railroad is constantly confronted with the relatively larger expenditures it must make, by reason of its location, for transportation on foreign lines. Freight charges represent 65 per cent of the delivered cost of its fuel, for example, while the all-rail haul on its purchases of West Coast lumber amounts to \$29 per ton. Particular emphasis, therefore, is placed on freight rates in all purchasing, both in the selection of the sources of supply, in the tonnage purchased from each location and in its routing

to reduce cost and to get the benefit of through rates and rate divisions wherever possible.

The key to this study is a loose-leaf record maintained in the purchasing department. All sources of supply are arranged alphabetically in this book (one page for each source) and the rates are listed to show the through carload rate to each store on the Boston & Maine and Maine Central, the division of these rates between carriers and any corresponding rates for special equipment or special handling. This record is supplemented by a list which has been prepared to show the most economical routing of L. C. L. movements from specific locations. Frequently with the aid of this book, arrangements have been made, when purchasing L. C. L. lots, to route the shipment successively to one or more intermediary

points for further loading to get the least off-line charge in the total cost to destination.

In the interest of reducing the possibility of car shortages as well as to assure an uninterrupted supply of fuel for its own use, the Boston & Maine and Maine Central have unloaded 68,000 tons of coal in stock piles, which is about a two months' supply, and are now preparing to increase the stock piles of coal by 44,000 tons during the next three months. Reports are received daily from each storehouse giving the car numbers of all equipment loaded and unloaded each day, and a summary of the total number of cars on hand, received, unloaded, loaded and held over each day, and these reports are studied regularly to insure the prompt handling of all cars of company material.

Communication . . .

Questions Dr. Gilles' Index of Freight Rates

SAN FRANCISCO

TO THE EDITOR:

Dr. Robert C. Gilles' plan of determining a weighted index of freight rates outlined in article "Toward an Index of Freight Rates" in the *Railway Age* of August 2 is interesting but, I suspect, unreliable.

I join the Doctor in condemning the use of average revenue per ton mile as an index of average rate. At no time is "the average revenue per ton-mile" an accurate reflection of the average railroad rate as applied to traffic moving at any one time. It is, and can only be, an approximation of average earnings per ton-mile on freight handled, calculated rather loosely from various types of reports, none of which reflect the accuracy required in assessing freight charges. It is influenced by all of the elements mentioned and, in addition, by credits and debits to freight revenues by reason of adjustment of transits, undercharges, overcharges, errors in interline account settlements and other practices affecting revenue figures. I hope the time will come when no student of transportation will use "average revenue per ton-mile" as synonymous with "average rate per ton-mile."

A study of statistics is unnecessary to demonstrate that the decline in average revenue per ton-mile was occasioned principally by causes other than reduction in freight rates. Everyone knows that there has been a large diversion of traffic from rails to highways since 1930. That traffic was primarily high-rated and short-haul traffic. High-rated and short-haul traffic produces substantially higher revenue per ton-mile than the average. These two factors are principally responsible for the increase in average haul as well as for the decline in average revenue per ton-mile. The great increase in transit privileges during the past decade, particularly partial loading and unloading, is another factor.

Dr. Gilles' index is of questionable accuracy because of the impracticability of finding an accurate weighted average of the great volume and variety of traffic and lack of knowledge of the relative volume between various points and within various territories. One freight rate may have been reduced 50 per cent without an appreciable change in the rate level on that commodity in the particular territory because the volume moved on the higher freight rate was nominal.

The Doctor's study indicates an average increase in the trans-continental rate level 1940 over 1930 of 5.1 per cent. I am positive that the weighted average trans-continental freight rate was somewhat less in 1940 than it was in 1930.

The Doctor does not list the 56 rates used in arriving at his estimate. The facts are that rates on commodities constituting the bulk of trans-continental traffic, both in volume and in revenue, were lower in 1940 than in 1930. Illustrative of this are eastbound citrus fruit, apples, other deciduous fruit, grapes, lumber, dried beans, dried fruit, canned goods, potash, borax,

sugar, live stock, potatoes, vegetables and fish oils. The average rate on each of those commodities was less in 1940 than in 1930 by substantial amounts. The only eastbound heavy moving items that would weight an increase are leaf and root vegetables (other than potatoes). The increase on those would average less than 5 per cent.

Westbound rates on automobiles, trucks, automobile parts, drugs and chemicals, glassware, hardwood, tires, corn, live stock, canned goods and rice were substantially less in 1940 than in 1930.

The foregoing are illustrative only, but represent a large percentage of the total trans-continental traffic. There are, of course, many rates in the trans-continental tariffs that were 5 to 10 per cent higher in 1940 than in 1930, but traffic under those rates did not move in either year in volume comparable to that on rates lower or substantially the same in 1940 as in 1930. For instance, there was only a small movement of iron and steel articles in 1940 or 1930. The rates were 10 per cent higher in 1940 than in 1930, whereas there was a large movement of tin-plate westbound, the rate on which in 1940 was less than 3 per cent greater than in 1930.

In an effort to check my opinion that the average trans-continental rate was less in 1940 than in 1930, I have examined Southern Pacific's trans-continental traffic statistics for the years 1940 and 1930 and find that Southern Pacific's average revenue per ton on trans-continental traffic was 15 per cent less in 1940 than in 1930. Its average revenue per ton on eastbound traffic was 21 per cent less and on westbound traffic 4 per cent less.

We all know that the average haul on trans-continental traffic does not vary greatly. It also flows fairly uniformly via the various routes and gateways; hence we know that Southern Pacific's average haul on trans-continental traffic in 1940 was not materially different than in 1930. The only factors, therefore, that might cause a variation in average revenue per ton are the rate level and change in character of traffic. In 1940 a greater percentage of our eastbound traffic was lower-rated traffic than in 1930. This was probably not the case with respect to westbound traffic, as there was an increase in recovery of high-rated traffic from intercoastal lines due to various causes during the past decade, principally to labor difficulties on the Pacific Coast and elimination or reduction of some of the high-class intercoastal steamship services.

Tabulation 2 shows that Pacific Coast 1940 index was 86.4 per cent of the 1930 index. This was determined by use of 40 rates. How the Doctor selected these rates or the source of data from which he obtained his weighted averages is not clear. The Pacific Coast traffic and rate structure is so varied and the area over which it moves so extensive that no test of this sort that is practical would be trustworthy. This is also true of traffic in Intermountain territory. It would be pure accident if the indices developed in the study reflected the weighted variation in rates in those territories.

H. C. HALLMARK,
Freight Traffic Manager—Rates & Divisions, S. P. Co.

NEWS

Penn Truckers Are Real Mad

Provoked that governor and highway dept. frowned on weight-hike scheme

The Pennsylvania Motor Truck Association believes that the state should raise limits on truck weights and provide "some slight relief from the trade barrier which has been erected around Pennsylvania by selfish interests seeking to bar the progress of the trucking industry which has done so much to improve distribution facilities and lower prices." And, says the association, if the state's highways are too obsolete to permit the raising of such limits "then it is time for the highway users of Pennsylvania in the interest of safety, commerce and national defense to rise up and demand to know why."

Specifically, the truck association is angry with Governor Arthur H. James for vetoing a truck-sponsored bill to increase the legal maximum weight of motor vehicles in the state to as high as 42,000 lb. The association called a mass meeting of truck operators at Harrisburg, Pa., on August 25 to map plans to fight what is termed the state administration's "horse-and-buggy" highway policy, according to "Transport Topics," weekly organ of the American Trucking Associations.

The bill which Governor James vetoed the week of August 11 would have increased the legal maximum weight of vehicles carrying two axles from 26,000 to 30,000 lb.; of those carrying three axles from 36,000 to 40,000 lb. and of tractor semi-trailer combinations from 39,000 to 42,000 lb. With respect to the latter single-axle loads would be permitted up to 19,000 lb., now limited to 16,500 lb. per axle for six-wheel trucks and to 18,000 lb. for tractor semi-trailers. Discussion on the bill in both the house and senate was heated and charges were hurled from both sides that trucking companies and railroads were connected financially with the proponents and opponents, respectively.

In vetoing the bill, the Governor said: "From information received from the Department of Highways, it is clear that the highways of this Commonwealth are not sufficiently strong to accommodate any increase in truck weights or axle loading. Pennsylvania has greater mileage of low-cost improved rural highways than any other state, and at the present time such highways are being subjected to heavier

truck loads than the capacity for which they were designed. Even the main highway system of approximately 20 years of age is less capable than it was 10 years ago of sustaining the impact from heavy trucks, because the mere lapse of time has an adverse effect upon concrete pavement."

Apropos of the veto the Executive committee of the truck association declared: "He has completely ignored the entire trucking industry, third largest industry in the State, which presented its proposals for revision of Pennsylvania's antiquated highway transportation law after two years of careful study.... The viewpoint of the industry was never considered by the Governor. No representative of the trucking industry was even consulted."

The association particularly assailed the State Highway Department for advising the governor to veto the weight-boosting bill. As for the governor's statement that the law authorizes issuance of special permits for loads exceeding the legal maximum weights, the statement read: "We have learned, however, that such permits are being refused arbitrarily where rail facilities exist, despite the fact that commodities have to be moved to and from railroad by truck. The handwriting on the wall is clear."

President Signs Stolen Cattle Measure

President Roosevelt has signed S. 1261, which provides for the punishment of persons transporting stolen cattle in interstate commerce. A similar measure had passed several different sessions of Congress but had always received a Presidential veto.

Japanese Railways Close N. Y. Office

The Japanese Government Railways announces that it is closing its traffic office at 630 Fifth Avenue, effective August 31, with the hope "that the time will soon come when we may re-open our offices here." The railway opened its first office in New York in 1917.

Eastern Car Officers to Meet September 9

The Eastern Association of Car Service Officers will hold its Fall meeting at the Hotel Cleveland, Cleveland, Ohio, on Tuesday, September 9. Included on the program is a mid-day luncheon which will observe the fact that the association has just reached its half-century mark. Hence, all members and friends associated with the group in its early days will be especially welcome.

Rio Grande Gets Abandonment O. K.

Case where Senate horned in at union's behest is decided in petitioner's favor

Entirely disregarding a special Senate interstate commerce subcommittee report on the subject, the Interstate Commerce Commission, by a vote of eight to three, has decided to uphold the decision of Division 4 in Finance Docket No. 12829, wherein the latter authorized the Denver & Rio Grande Western to abandon its narrow-gage line from Antonito, Colo., to Santa Fe, N. Mex., 125.3 miles. Commissioners Aitchison, Splawn and Alldredge noted dissents, saying that they were of the view that a further hearing should be granted as had been requested by the labor unions involved.

Division 4 originally permitted the abandonment of the line on January 22, but because the Senate acted favorably on Senator Johnson's (Democrat of Colorado) resolution calling for an investigation by the Senate of the abandonment, final action by the commission has been postponed from time to time until the present.

At the same time railroad labor on the line, acting through the Brotherhood's Rail Service Organization, had requested the commission to reopen the case to permit the introduction of new evidence into the record. One of the chief reasons advanced by labor was to the effect that the present emergency required the retention of the branch.

The subcommittee headed by Senator Johnson, recommended in its report, details of which were given in the *Railway Age* of June 7, page 1018, that the commission should deny the application of the railroad for the abandonment "without further delay," but went on to say that the commission "should at least postpone permission to abandon this vital rail connection until the adverse effect on large areas of the southwest has been given further study and examination." The report also criticized the policies of the railroad respecting branch lines and advocated a standard-gage line to replace the present narrow-gage one.

In denying the request of labor for a reopening of the case and permitting the railroad to abandon the line, the majority disposed of the national defense argument by declaring that it was based "primarily on speculation concerning remotely pos- (Continued on page 356)

Budd Fears Break-Down in Transport

Unless priorities system works better, roads will be short 100,000 cars in Oct. '42

That there is going to be a break-down in transportation, unless the government's priority system can be made to work better in getting needed materials to equipment manufacturers was the prediction of Ralph Budd, defense transportation commissioner, in an address on August 26 to the State Utilities Commissioners, meeting in St. Paul.

"On June 1, 1940," said Mr. Budd, "the railroads owned a total of 1,648,696 freight cars. In July, 1940, it was decided that the ownership should be built up to 1,700,000 cars by October 1, 1941. Normally, about 80,000 cars are retired every year through age or accident, but it was decided to repair as many of the old cars as practicable so that they could be used for four or five years longer. In this way retirements have been reduced by about one-half.

"The new car building program—in order to raise the ownership to 1,700,000—called for about 100,000 new cars by October 1, 1941. From June 1, 1940, to June 1, 1941, orders were actually placed for 112,320 cars. Owing to inability to obtain material for carrying out this car building program, I regret to say that on October 1, 1941, the program will fall about 20,000 cars short.

"In the period June 1, 1939, to August 1, 1941, there were placed in service 126,200 new freight cars, 650 new passenger cars, and 966 new locomotives. The total cost of these and other improvements was \$975,000,000.

"It is worthy of note that during the same period the total number of trucks in the country has increased from 4,225,000 to 4,650,000, and private automobiles from 25,261,000 to 27,500,000, while 5800 miles of trunk pipe lines have been added. The capacity of the entire transportation plant has been growing quite rapidly since the middle of 1939, and especially during the past twelve months. At the end of this year there will be 5,000,000 trucks on the highways. That is more than ever before, and it is estimated that there will also be 28,000,000 private automobiles on the highways.

"Early this year, plans were made to bring the total railroad ownership to 1,800,000 cars by October 1, 1942. If this goal is to be reached, about 160,000 new cars must be built between October 1, 1941 and October 1, 1942.

"At present a serious complication has arisen through the control of steel and other metals by the issuance of government priority order. This has interfered seriously with carriers of all types in obtaining materials and supplies for current maintenance, and for making necessary additions to their plants. I have already referred to the inability of the railroad car builders to keep up the car building program. This program is now being carried on at about one-

half the scheduled rate set up to meet the needs of anticipated traffic. That lag means that the proposed expansion to 1,800,000 cars by October 1, 1942, will fall 100,000 short unless some way is immediately found to supply more steel, iron, lumber and other essential material to the railroads and to the car builders.

"New locomotives are also badly behind promised delivery dates. Deliveries of maintenance and repair parts not only for cars, but also for locomotives, and to a necessary extent for repair to tracks, bridges and structures have slowed down and now threaten seriously to impair the operation of the railroads. It is true the roads have not failed yet, and their record to date indicates that they will not fail if arrangements can be made promptly for securing the necessary material, but otherwise failure is inevitable.

"No one unfamiliar with the almost insuperable difficulties of allocating essential materials to the hundreds of thousands of users engaged in all degrees of defense work, can appreciate the priority problem. Upon its solution, however, depends the continued success of the national transportation system."

Court Approves Plan Allowing Pennsylvania to Control Wabash

On August 25, Federal Judge Charles B. Davis at St. Louis, Mo., approved the reorganization plan for the Wabash, previously approved by Division 4 of the Interstate Commerce Commission. As reported in the *Railway Age* of August 9, the Commission at the same time authorized the Pennsylvania to gain control of the reorganized Wabash. Judge Davis commented that participation of the Pennsylvania was an integral part of the plan of reorganization.

G. M. & O. to Acquire Predecessors' Highway Operations

The Interstate Commerce Commission, Division 4, has authorized the Gulf, Mobile & Ohio to acquire control of Gulf Transport Company, Mobile & Ohio Transportation Company, and Mobile & Ohio Transportation Company of Illinois through ownership of capital stock and purchase of motor carrier operating rights and property of the Mobile & Ohio. The proposed transactions are part of the plan whereby the G. M. & O. acquired the properties of the M. & O. and the Gulf, Mobile & Northern.

Senate Votes Gasoline and Priorities Inquiries

The Senate commerce committee, on August 26, voted to authorize investigations of the administration of priorities and of shortages of gasoline, fuel oil and other petroleum products. Senator Maloney, Democrat of Connecticut, author of two resolutions calling for such inquiries, whose introduction was noted in last week's issue, was appointed chairman of a subcommittee which will begin hearings on the gasoline shortage question on August 28. Ralph K. Davies, acting defense petroleum coordinator, is scheduled to be the first witness.

Minimum Rates On Petroleum

I. C. C. sets rail and truck rates, with Splawn, Mahaffie and Patterson dissenting

With three dissenting commissioners complaining that the majority report "seems to grope after value of service and what the traffic will bear, though competitive conditions have lessened the persuasiveness of those factors," the Interstate Commerce Commission has prescribed minimum rail and motor carriers' rates on petroleum products moving distances of 170 miles or less between points in Kansas, Oklahoma, northwestern Arkansas and southwestern Missouri. At the same time the rates on petroleum products from points in Kansas and Oklahoma to points in Colorado were found not unreasonable or otherwise unlawful.

The minimum rate order requires that present rail rates in effect since September 8, 1939, be increased; and the increased basis is then prescribed as a minimum basis for both rail and motor carriers. The prescribed minima range from four cents per 100 lb. for distances of five miles to 13.5 cents for 170 miles, as compared with present rate ranging from three cents for five miles to 13 cents for 170 miles. The title case was docketed as No. 28380, an investigation instituted by the commission upon its own motion on November 22, 1939. The aforementioned dissenting expression was filed by Commissioner Splawn with a notation stating that Commissioners Mahaffie and Patterson agreed with him. Commissioner Aitchison did not participate in the disposition of the proceeding.

Among other factors influencing the majority decision was the failure of the railroads to furnish cost evidence to support their contention that the present rates were reasonably compensatory. In that connection the commission said that "where many of the rates are plainly so far below a maximum reasonable level, the failure of the rail carriers, in full command of all the facts, to produce them of record is a circumstance which may properly influence us in arriving at our ultimate conclusions."

On the other hand it did not appear to Dissenter Splawn that a cost study was necessary, since the car-mile earnings under the rates required to be increased "are so much higher than the average of such earnings on all traffic." Mr. Splawn calculated that the condemned rates yield from \$1.12 to 42.8 cents per car-mile for distances of 25 to 170 miles; and he recalled how the commission recently prescribed maximum reasonable rates for petroleum from the mid-continent field on a basis which produces a car-mile-revenue yield "ranging from 50.4 cents to Kansas City, Mo., 244 miles, to 27.5 cents to Green Bay, Wis., 834 miles, with even lower relative yields from more distant groups." In fact, the dissenting commissioner suggested that the rates prescribed as minima "appear to be so high that they

might under the conditions set forth in the report be challenged as exceeding the maximum of reasonableness."

"The rail carriers," Mr. Splawn also said, "have taken a realistic view of the changed conditions. Under these changed conditions they cannot defend relatively high rates on any theory of what the traffic will bear. Important considerations which determine maximum reasonable rates are no longer present under the conditions recited in this report. Yet, in fixing minimum rates, the report seems to grope after value of service and what the traffic will bear, though competitive conditions have lessened the persuasiveness of those factors."

Tariffs for Red-Cap Service

The Interstate Commerce Commission has postponed from October 1 until November 1 the effective date of its recent order requiring the Cincinnati Union Terminal Company to publish a tariff covering its ten-cents-per-bag charge for red-cap service.

Magazine Editors to Meet in New Orleans

The annual meeting of the American Railway Magazine Editors Association will be held at the Hotel Monteleone, New Orleans, La., on November 14 and 15. A tentative program provides for departure from Chicago on November 13 on the Panama Limited of the Illinois Central and the holding of a memorial to Casey Jones enroute. A business session will be held on November 14, as well as a luncheon at Antoine's and a banquet in the evening. A business session will follow breakfast at the Patio Royal on November 15.

Tourist Travel Exceptionally High in Canada

The Canadian National reports that there has been a large increase in passenger business during this Summer season, as compared with last year, and that there has been a notable increase in the volume of tourist travel originating in the United States. Resort centers of the railroad at Jasper Park, Alta., and Minaki Lodge, Ont., for August were sold out early in July and Canadian National steamers between Vancouver, B. C., and

Skagway, Yukon, are operating to capacity.

W. W. Swinden, general superintendent, Sleeping & Dining Car department, states that heavy passenger travel has put a large burden on dining car facilities. Every diner and buffet on the road is in use and in cases where trains are operated in extra sections the road's facilities are sorely taxed. Patrons are being asked to retire as soon as they have completed a meal in order that others may obtain service.

Mediation Still Progressing

Mediation of rule changes, wage increases and other proposals entered its second week with the three members of the National Mediation Board reporting "progress." Since August 14, when the Mediation Board began meetings at Chicago it has met behind closed doors in separate sessions with the representatives of the employees and the conference committees of the railroads. At the time of going to press, no joint meeting of the representatives of the unions and the railroads had been held by the Board. On August 25 it appeared that mediation would continue for some time.

J. G. White to Probe L. I. Situation

The Long Island announced on August 21 that it has retained the J. G. White Engineering Corporation of New York to make a complete study of all phases of the railroad's operations and services and render a report thereon. The purpose, according to the announcement, is that "the advice and suggestions of competent and independent engineering and management counsel would be helpful in its [the railroad's] continuing effort to render attractive, efficient and economical service to the people of Long Island and the metropolitan district."

Tehuantepec Railroad to be Reconstructed

Because of the possibility that traffic through the Panama Canal might be interrupted, Avila Camacho, president of Mexico, has ordered the National Railways of Mexico to reconstruct the Tehuantepec Railroad which extends from Coatzacoalcos, Veracruz, on the Gulf of Mexico to Salina Cruz, Oaxaca on the Pacific ocean, a distance of 188 miles. The capacity of

the line will be increased to 80 trains a day through the laying of 112-lb. rails, the reinforcement of roadbed and the improvement of yards. The cost is estimated at 12 million Pesos.

New Haven Appoints a Lady Dietitian

The New York, New Haven & Hartford has appointed Miss Margaret McGovern, formerly head dietitian at Boston City hospital, as dietitian of its dining car department. In this new post Miss McGovern will be in charge of menu preparation and cooking instructions and will supervise all food preparation for the entire road, which serves more than 1,000,000 meals a year.

A graduate of State Teachers College at Framingham, Mass., Miss McGovern did post graduate work in dietetics and food chemistry at Columbia University. She was affiliated with Boston (Mass.) City Hospital for 23 years.

Ickes Reverses Himself on Contract Awarding Policy

The latest move in what an Interior Department statement called Secretary Ickes' "unremitting campaign against the practice of identical bidding" is a decision to award the contract in such cases to the bidder closest to the site. Previously, Mr. Ickes had dealt with identical bids by awarding the contract to the bidder farthest removed from the delivery point, his theory being that "the railroads, at least, thus were enabled to benefit at the expense of the identical bidders although the government received no advantage from its policy of offering its work and purchases on a free, presumably competitive market."

The new policy, the announcement explains, was adopted "as a means of reducing to a minimum transportation requirements in connection with materials purchased, and thus as a means of easing the burden placed by defense demands on transportation facilities."

Six Months Air Traffic

Domestic air lines during the first six months of this year carried 1,569,608 passengers as compared with 1,151,458 in the first half of 1940, an increase of 36.3 per cent, according to data made public by the

* * * *



Photo by Frederick Hoffman

The Joint Freight Office of the Central Vermont and Boston & Maine at Brattleboro, Vt. Has a Lawn, Garden, Window Boxes and Excellent Neighborhood Scenery

Civil Aeronautics Administration. Seat-miles flown were likewise up 36.3 per cent, but revenue passenger miles increased only 29.5 per cent, thus leaving a less favorable revenue passenger load factor—55.46 this year as compared with 58.39 in the January-June period of 1940.

Express carried by the air lines in the first half totaled 7,795,584 lb., an increase of 49.8 per cent over the 5,204,610 lb. carried in the corresponding period of last year. Express pound-miles were up 46.2 per cent.

1,650,000 Members of Armed Forces Transported in Seven Months

"Without interference with other heavy traffic, more than 1,650,000 members of the armed forces of the nation were transported by the railroads during the first seven months of this year," according to the Military Transportation Section of the Association of American Railroads. Nearly a million men were handled on 3,315 special trains, many of them over long distances; the remainder moved in groups on regular trains.

While military movements during July were less than in any other month of this year with the exception of May, they nevertheless aggregated 199,982 men, of whom 128,200 were transported on 454 special trains. Of the 71,782 men moving on regular trains during July, 54,003 were selectees traveling from induction stations to reception centers.

Standard Time in Georgia

Examiner Thomas E. Pyne has recommended in a proposed report that the Interstate Commerce Commission modify outstanding orders to include an additional portion of Western Georgia in the Eastern Standard Time Zone, but that it deny petitions for change insofar as they seek to include all of Georgia and additional portions of Eastern Kentucky and Tennessee. The proceeding arose as a result of Georgia's action of March 21, 1941, adopting Eastern Standard Time for the entire state.

With a list of exceptions, "which would be for operating purposes only," the examiner would have the commission transfer from the Central to the Eastern zone such portion of Georgia as lies east of the Louisville & Nashville from Murphy, Tenn., to Atlanta, Ga., and the Atlanta & West Point to West Point, Ga.

Warns Railroads Against "Pincer Movement"

The Illinois Chamber of Commerce, in a statement issued on August 22 by C. G. Ferris, executive vice-president of the Chamber, warned the railroads that they are in great danger of winding up in the hands of the government, if the present economic "blitz" directed against them is not checked. Concerning this "pincer movement" Mr. Ferris said:

"The present pincer movement, involving extraordinary increases in wages for employees, forming one arc of the encircling movement, and special freight rate privileges suggested by the government forming the other arc, would make it appear that if this economic 'blitz' is not

checked, our railroads will wind up in the hands of the government, which means from the long range standpoint that everyone concerned, labor, capital and the public, is going to suffer. The taxpayer will face one more added burden, labor will find itself regimented and controlled, and the holders of railroad securities will find their greatest consolation in being able to write off losses on their income taxes, that is, provided future income tax laws do not eliminate the privilege of taking losses entirely. . . . Increased rail wages and changes in working conditions should be kept within reasonable bounds and the government should hardly be the recipient of special privilege, which it has so vigorously condemned when indulged in by private enterprise."

Rules on Coal Confiscated or Lost in Transit

The Bituminous Coal Division of the Department of the Interior has issued an order setting a hearing on September 22 at Washington, D. C., to clarify provisions of the marketing rules and regulations dealing with the invoicing of coal confiscated by carriers or lost in transit. The hearing will be held before Division Trial Examiner Scott A. Dahlquist.

Marketing rules and regulations now provide that: "All coal confiscated or lost in transit shall be invoiced to the carrier at not less than the applicable minimum price for such coal for sale to the carrier at the place of confiscation or loss." The Division has proposed that the provisions be amended to read as follows: "All coal confiscated in transit shall be invoiced to the carrier at not less than the applicable minimum

f. o. b. mine price for such coal for sale to the carrier; provided, however, that such price shall not be subject to any deductions for trackage, switching, or other transportation charges, nor any off-line freight charges. All coal lost in transit shall be invoiced to the carrier at not less than the market value of the coal at destination; but in no event less than the applicable minimum price for sale at destination."

Club Meetings

The next regular meeting of the Car Foremen's Association of Omaha, Council Bluffs and South Omaha Interchange will be held on September 11 at the Union Pacific offices at Council Bluffs, Iowa.

The regular annual meeting of the Mid-West Air Brake Club will be held on September 10 and 11 at Springfield, Mo. The first day's meeting will include discussions of "Progress Vocational Training," "AB' Empty and Load Brake" and a demonstration at West shop. The second day's program comprises discussions of coolers and filters for air brake systems and No. 8 ET equipment and modified No. 6 ET equipment, together with a demonstration at the shops.

Transportation of Explosives

Proposed amendments to Interstate Commerce Commission regulations governing rail transportation of explosives and other dangerous articles and proposed regulations for such transportation by motor vehicle comprise the subject matter for a hearing set for September 18 at Washington, D. C., before Assistant Director Homer C. King of the Bureau of Service. The proposals, which were made public by the commission

* * *



Victory "V" Tickets Sold by Boston & Maine

The Boston & Maine placed red, white and blue railroad tickets cut in the form of the victory "V" on sale at stations in Camp Devens, Mass., and Ayer, starting August 25. The special tickets are issued to cover afternoon and evening special fare round-trip excursions to and from Boston for both uniformed men and the general public. One leg of the "V" contains the "going" portion and the other the "return" portion for the journey.

last week, will also be the subject matter of pre-hearing conferences to be held September 15, 16 and 17 between the Bureau of Explosives, Association of American Railroads, and interested parties.

The Transportation of Explosives Act authorizes the commission to utilize the services of the A. A. R. Bureau; and one objection of the motor carriers to the regulations proposed for them runs to the regulation which requires that accident reports be made to the A. A. R. Bureau.

WPA Rail Removal Program to Salvage Steel

A program for removal of abandoned, publicly-owned street-car rails by WPA labor to salvage the steel for defense production has been announced by Howard O. Hunter, commissioner of Works Projects.

He directed all State WPA administrators to expedite requests of local governments for assistance and to give the work first priority in the WPA program. The plan was prepared at the request of Ralph Budd, transportation commissioner of the Office for Emergency Management, who has estimated that more than 200,000 tons of publicly-owned rails alone lie abandoned in city streets.

WPA rail-removal operations under this program are conditional on the local government's submitting a statement that it will dispose of the steel as directed by the Office of Production Management and a certificate that the rails are public and not traction company property.

OPACS Amends Iron and Steel Scrap Schedule

Amendments to the iron and steel scrap schedule which add Cincinnati, Ohio, as a basing point, establish net f. o. b. line prices for "rerolling" rail on certain railroads, and provide uniform shipping point prices at various Gulf ports have been

announced by the Office of Price Administration and Civilian Supply.

By adding Cincinnati, the announcement said, OPACS now has provided basing points for the major scrap consuming areas in the United States. The amendment having to do with "rerolling" rail permits railroads not operating in a basing point to sell such rail f. o. b. lines at the average price of their f. o. b. lines scales during the period from September 1, 1940, to January 31, 1941. Rerolling mills may absorb all transportation charges necessary to obtain delivery of the rail. This permission to absorb freight applies to rerolling mills only, since in no case may rails of rerolling quality be diverted for melting purposes. In specifying uniform shipping point prices at various Gulf ports, OPACS "has kept the parity of domestic and export prices attained in the amendment of August 8, while raising the ceiling to a level sufficient to stimulate greater collection of scrap in this region."

No Increase in Rail Rates on Defense Materials

Current reports to the effect that "rates for transportation of defense materials have been raised as a result of transportation shortages" are incorrect as to railroad rates, said Robert S. Henry, assistant to the president of the Association of American Railroads, in a recent circular addressed to railway public relations representatives. Colonel Henry pointed out that there have been increases in ocean shipping rates and "in certain joint water-and-rail rates," the latter "made at the request of the Maritime Commission and the Interstate Commerce Commission in an effort to keep the water services in operation."

As to all-rail rates, he said: "There have been no increases in all-rail rates on any commodity even remotely related to the national defense program. On the contrary, in taking over the movement of com-

modities ordinarily handled by water, the railroads have in many cases reduced rates below the normal all-rail basis." In the latter connection the circular cited specific examples of adjustments as evidence "that the railroads are not taking advantage of shortages in other forms of transportation as an excuse for the raising of rail rates; on the contrary, they are doing all that could be reasonably expected in meeting the situations created by the emergency elimination of other forms of transportation."

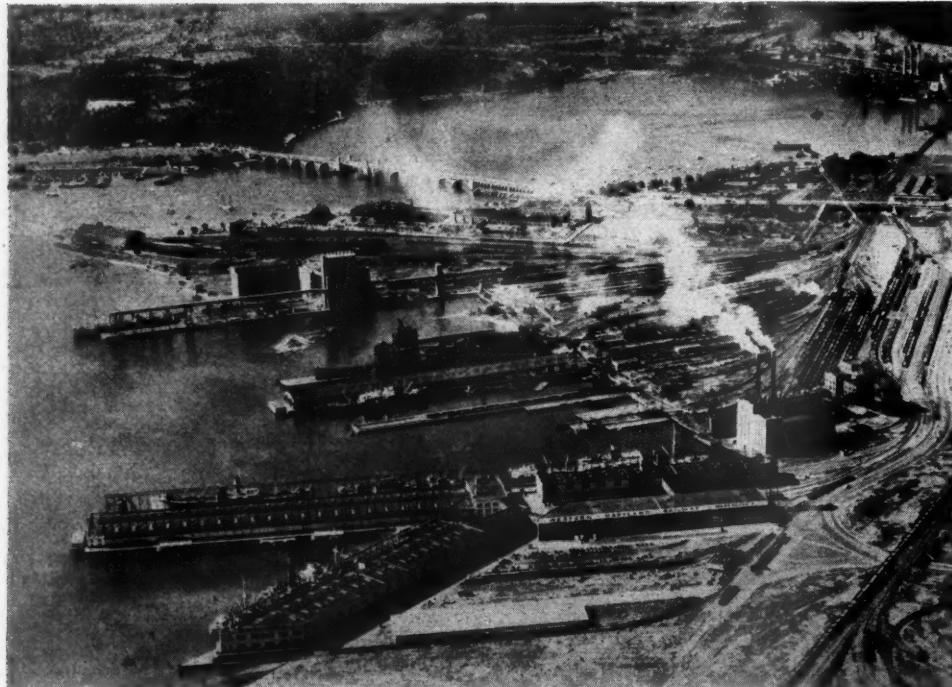
N. & W. Editors Scan "Ages" of 50 Years Ago

Editors of the "Norfolk & Western Magazine" recently investigated contents of two 50-year-old copies of the *Railway Age* and set forth their reactions in an illustrated feature article appearing in the August issue of the employees' magazine. After looking through the issues—that of March 22, 1890, and November 25, 1892, respectively—the N. & W. editors were most impressed with the progress that has been made on American railroads in general and the N. & W. in particular since those dates.

Among the interesting topics uncovered were an editorial expressing gratification at the extent to which automatic brakes had been applied to freight cars; a description of a clock signal designed to inform locomotive engineers how much time had elapsed since the last train ahead had passed and an article concluding that electricity was too expensive and unreliable a method of lighting railroad coaches.

Apparently the present *Railway Age* opposition to government subsidy is not a new position, for the N. & W. editors found an article expressing strong opposition to a scheme for a government-owned telegraph line in competition with existing private companies. The N. & W. article also lists a number of references to the

* * * *



Air View of the Western Maryland's Rail-Water Terminal at Fort Covington, Baltimore, Md. In Terms of Carloads, Export, Coastal and Intercoastal Business Through These Facilities Was 80 Per Cent Greater in 1940 Than in 1939. Berthing Space Is Provided for 23 Ocean-Going Vessels

affairs of its own railroad in the 'Nineties and contains a short history of the *Railway Age* to the present day.

Freight Car Loading

Loadings of revenue freight for the week ended August 23 totaled 899,750 cars, the Association of American Railroads announced on August 28. This was an increase of 9,376 cars, or 1.1 per cent, above the preceding week, an increase of 138,642 cars, or 18.2 per cent, above the corresponding week last year and an increase of 215,844 cars, or 31.6 per cent above the comparable 1939 week.

As reported in last week's issue, loadings of revenue freight for the week ended August 16 totaled 890,374 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, August 16

Districts	1941	1940	1939
Eastern	180,156	150,048	135,449
Allegheny	194,198	158,874	129,186
Pocahontas	60,143	50,812	48,134
Southern	120,760	97,270	92,156
Northwestern	150,483	132,692	116,503
Central Western	128,014	107,611	103,618
Southwestern	56,620	45,743	44,747
Total Western Districts	335,117	286,046	264,868
Total All Roads	890,374	743,050	669,793
Commodities			
Grain and grain products	44,375	43,344	43,965
Live stock	10,930	12,833	12,566
Coal	167,714	135,211	114,524
Coke	13,490	10,609	6,813
Forest products	50,365	36,329	31,371
Ore	78,847	69,524	48,004
Merchandise I.c.l.	156,256	149,864	153,373
Miscellaneous	368,397	285,336	259,177
August 16	890,374	743,050	669,793
August 9	878,549	727,073	661,023
August 2	883,065	717,927	637,068
July 26	897,399	718,038	655,531
July 19	899,370	730,460	651,665
Cumulative Total, 33 Weeks	25,911,843	21,925,035	19,783,405

In Canada.—Carloadings for the week ended August 16 totaled 64,247 cars compared with 60,535 cars for the previous week and 57,121 cars for the corresponding week in 1940, according to the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Aug. 16, 1941	64,247	29,348
Aug. 9, 1941	60,535	28,354
Aug. 2, 1941	63,144	30,737
Aug. 17, 1940	57,121	23,165

Cumulative Totals for Canada:

Aug. 16, 1941	1,931,787	965,172
Aug. 17, 1940	1,683,557	799,022
Aug. 19, 1939	1,438,395	667,201

R. R. Tires of Maintaining Seawall; County Passes Buck to War Dept.

The Central of New Jersey constructed and has long maintained an expensive rock cribbing for a more than two-mile stretch along the Atlantic seacoast from Highland Beach, N. J., to Seabright, which has protected not only the two-track railroad but a public highway and a line of vacation cottages from the ravages of the sea. Both railroad and highway are located on a narrow stretch of sand separating the ocean from the Shrewsbury river and constituting land "throat" to strategic Sandy Hook, main line of defense for New York Harbor.

In March, 1940, the railroad (which is

under reorganization proceedings under Section 77) informed the affected property holders that it was no longer able to bear the entire cost of maintaining the sea-wall and has recently requested that Monmouth county share the expense. The county in turn on August 21 sent a request to the United States War Department asking that it take over the maintenance of bulkheads, jetties and stone breakwaters protecting the land strip. The railroad line affected is a portion of the Central of New Jersey's Southern subdivision connecting with the New York & Long Branch at Matawan, N. J., and Long Branch (West End) respectively. It was constructed early in the 'Seventies and carries a heavy commuting business during the summer months.

Publishers Have Faith in Roads; Firms Unload Promptly

The American Newspaper Publishers Association has issued in its Newsprint Bulletin No. 25 a resume of the freight car situation as it applies to the shipment of newsprint paper, wherein it states that "while there may be some cause for apprehension regarding ability of the American railroads to meet Fall loading period, we do not actually fear it." Pointing out that "the situation will be tight" the association calls upon its members "to make a greater effort to keep the car supply liquid." Among items in a program of co-operation are cited the suggestion that publishers completely unload cars, removing all dunnage and debris, thus making cars immediately available.

In order to determine to what extent publishers are complying with such suggestions and whether any unreasonable delays are occurring in unloading cars of

newsprint paper, the traffic department of A. N. P. A. made a survey of member papers from which 307 replies were received. Upon tabulation it was revealed that the 260 newspapers which receive the paper wholly or in part by rail will receive about 53,225 cars from Canadian and American mills during 1941. The average time required to unload one carload of newsprint paper from each of 40 states and the District of Columbia was found to be 7½ hours after work has actually begun on each car. On the whole, according to the bulletin, publishers are unloading freight cars in less than one eight-hour work day which, in view of the 48-hr. free time rule, indicates an unloading time generally below the average required to unload other commodities.

The association expresses discontent that as many as 239 publishers have advised that they cannot improve unloading time. It urges that even if additional expense is incurred "some newspapers can and should speed up their unloading. The faster cars are unloaded, the greater the contribution newspapers can make toward keeping the car supply liquid and the better the prospects of continuing to receive newsprint paper without resort to transportation priorities occasioned by an inadequate car supply."

Canadian Employees Win Point on Cost-of-Living Bonus

The Canadian Justice department at Ottawa, Ont., has issued an interpretation which upholds the railroad unions' contention that the cost-of-living bonus should be based percentage-wise on living costs as of August, 1939, as a standard and not on the level of the last previous bonus adjustment. The cost of living bonus prin-

* * *



Photo Courtesy New Haven

Vice-President R. L. Pearson of the New York, New Haven & Hartford Points Out the Features of the First of 1,000 New Box Cars Now Being Delivered to the Road to President H. S. Palmer. Some of the 999 Others May Be a Long Time Getting to the Home Road Because They Will Start Carrying Loads as Soon as They Leave the Car-Building Plant at Pittsburgh, Pa. Note Revival of the Old New Haven Monogram On Its Sides

principle for Canadian railroad employees was established by the famous order-in-council No. 7440 issued last Spring and agreed to by both the railroads and the unions.

The dispute between the two parties concerned only the interpretation of a base for each bonus adjustment. Both agreed that the government order calls for payment of a bonus of \$1.25 per week when the cost-of-living index of the Dominion Bureau of Statistics advances five per cent above the level of August, 1939. But the unions have held that further bonuses, as living costs increase, should be based on the same standard, while the railroads contended that any further bonuses should be based on increases from the date of the last bonus paid. The effect of the railroads' argument was that for future adjustments the bonus should be payable if the cost of living advanced five per cent of 105, five per cent of 110 and so on. The unions argued the basis should be five per cent of 100, then 10 per cent of 100 and so on.

A few days ago Prime Minister MacKenzie King and the Cabinet heard arguments from representatives of the men and the railways and turned the matter over to the Justice department for decision.

Rio Grande Gets Abandonment O. K.

(Continued from page 350)

sible future developments, and it is not supported by any request or representations by the military authorities."

The majority also had something to say about the possibility of requiring the company to change the line to standard-gage, and to continue operation for two years to permit shippers to demonstrate their ability to furnish sufficient traffic. ". . . In the last analysis," writes the majority, "this proposal means that a territory which has had a narrow-gage line for 60 years, but lately has withdrawn support of the railroad in favor of a more modern and acceptable form of transportation, desires that a new and different rail facility be provided, without regard to cost and without any guaranty or definite assurance that the new facility would be used except as its service better suited the interests and convenience of the shippers. No estimate of the cost of constructing a standard-gage line has been ventured. Certainly it would not be less, but in all probability would be much more, than the amount of \$510,598 estimated to be required for rehabilitation of the existing line."

"In the meantime," the commission concludes, "we are aware of no provision of law authorizing us to require that the line be reconstructed to standard-gage. To attempt to do so by indirection, that is, in a certificate permitting abandonment of the narrow-gage line upon condition that it be replaced with a standard-gage line, would be such an arbitrary abuse of the discretion vested in us by section 1 (18-20) of the Act as to invite immediate intervention of equitable relief."

Witnesses at the various hearings of

the commission and the Senate subcommittee had charged the railroad with apparent remissness as to solicitation, service, and rates. The majority did not feel that these charges merited any extended discussion. "The applicants have had recourse to rate reductions, with little or no avail," declared the majority opinion, "in the effort to meet some of the inducements of highway competition. As the managers of an insolvent railroad system, handicapped by depressed conditions in business generally and by increasing competition of other forms of transportation, it has been necessary for them, as well as the debtor company before them, to utilize every practicable means of reducing expenses; and this has been known for a long time."

In the docket of the proceeding is a letter written to Chairman Eastman by C. H. Buford, vice-president of the Association of American Railroads, urging that the abandonment be not delayed. Mr. Buford cited Office of Production Management efforts to bring out all possible railroad scrap and pointed out that the line was expected to yield approximately 15,000 tons of scrap.

New Priorities Rules

What the Office of Production Management announcement called "a new basic document" promulgating a series of broad rules and regulations which will apply to priorities orders and actions was issued on August 28 by E. R. Stettinius, Jr., director of OPM's Priorities Division. It is Priorities Regulation No. 1, and it lays down a general framework for priorities compliance, the most important provision being that which requires all manufacturers and producers to accept defense orders (subject to a few specific limitations) even if acceptance of those orders will prevent, or delay, deliveries on non-defense orders with lower preference ratings.

Defense orders are defined as those of the Army, Navy, United States Maritime Commission, Panama Canal, Coast & Geodetic Survey, Coast Guard, Civil Aeronautics Authority, National Advisory Commission for Aeronautics, and Office of Scientific Research Development; also, orders of units of the British Empire, Belgium, China, Greece, Netherlands, Norway, Poland, Russia and Yugoslavia, and orders placed by any agency of the government on behalf of beneficiaries of the lend-lease law. And finally "any other contract or order to which the director of priorities assigns a preference rating of A-10 or higher." Orders for railroad equipment with their A-3 rating are well within the latter category.

The new regulation's requirement that defense orders be accepted is set forth in a six-point formula, the requirement applying to all manufacturers, producers, distributors and dealers, in whatever category. However, specific provisions of any existing or future order issued by the director of priorities will control when in conflict with the general provisions of Regulation No. 1; in the absence of such conflict, Regulation No. 1 will always be applicable to any priorities order.

The OPM announcement summarized the major provisions of the new regulation as

follows: (1) The regulation provides a system under which any defense customer for any material, who is unable to place his order satisfactorily, or whose delivery is delayed, may bring this matter formally before the director of priorities who will take appropriate action. (2) The director may assign preference ratings to orders which have been placed or which have not been placed, and he may also issue binding instructions regarding deliveries, without assigning preference ratings. (3) Any person who has defense orders on hand must so schedule his production that deliveries under defense orders will be made on the dates required. (4) Delivery dates specified in defense orders must not be earlier than required. (5) Any allocations of material ordered by the director may be made without regard to preference ratings which have been assigned to deliveries under particular contracts or purchases, and in such cases specific allocations will take precedence over individual preference rating certificates or blanket ratings. (6) Intra-company deliveries, except when otherwise specified, are to be subject to the same restrictions which may apply to inter-company deliveries. (7) Accumulation of excess inventories is prohibited. (8) All records required to be kept by priority orders are to be open to audit and inspection by representatives of OPM. (9) Any person making wilful false statements may be deprived of deliveries of material; in cases where such action is warranted, the director may also recommend prosecution.

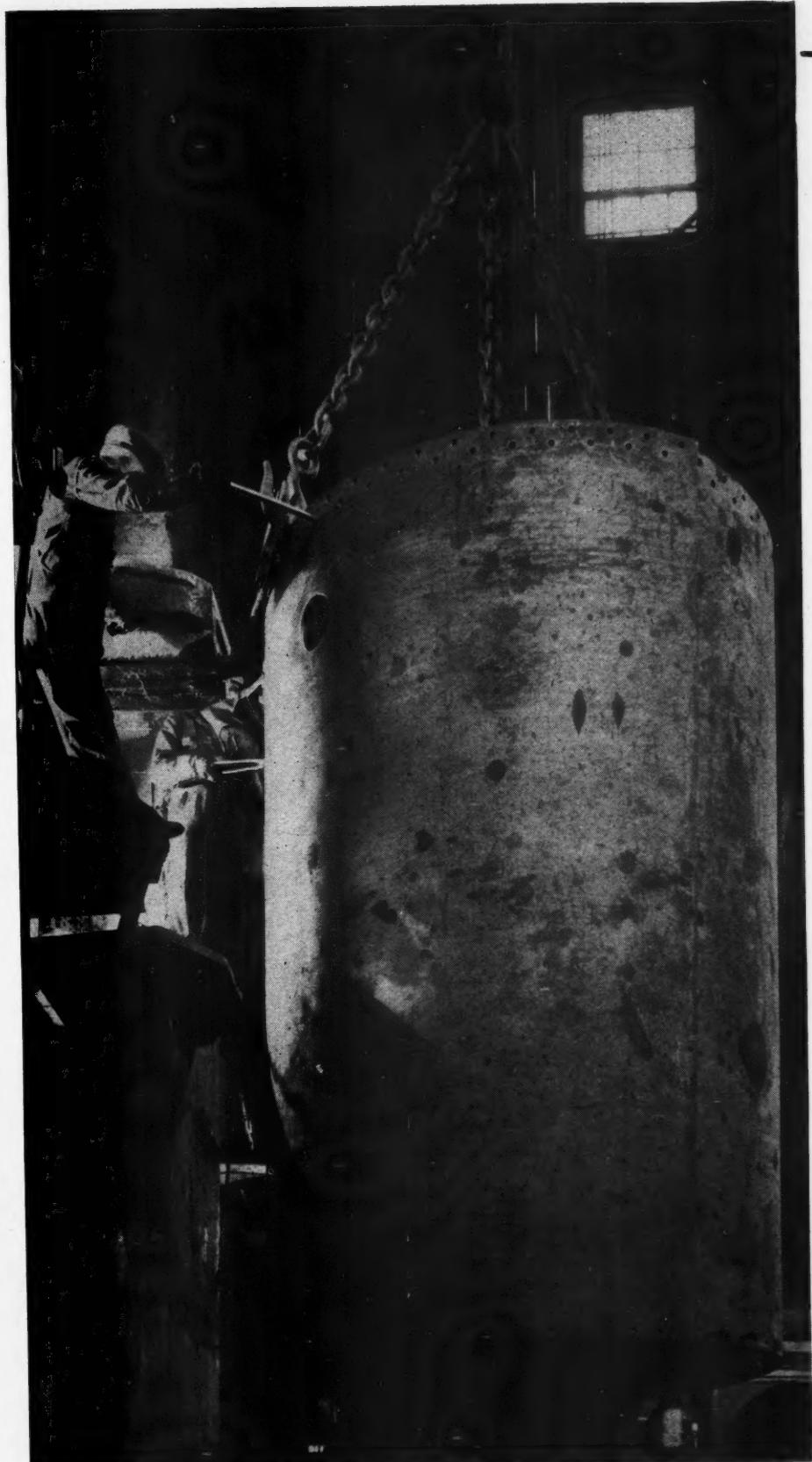
The priorities question came up at President Roosevelt's August 26 press conference, and the President said that he planned to issue a new executive order on the matter. The order, among other things, was expected to clarify the jurisdictional situation as between OPM and the Office of Price Administration and Civilian Supply.

Transport Board Sworn In

Members of the transportation study board called for in the Transportation Act of 1940 took the oath of office late last week and then held a brief meeting at the offices of the Interstate Commerce Commission where the board will have temporary headquarters while it seeks a permanent home in crowded Washington. Meanwhile the appropriation bill providing \$100,000 for the board's operations has been signed by President Roosevelt.

Members of the board, who took their oaths of office before the clerk of the Supreme Court, are Nelson Lee Smith of New Hampshire, Robert E. Webb of Kentucky, and C. E. Childe of Nebraska. Mr. Smith has been designated by the President to be the Board's chairman, while the Board has selected Mr. Webb for the vice-chairmanship.

At their meeting last week, members of the board are understood to have discussed their assignment and the matter of organizing a staff. The board is empowered, without regard to the civil service laws, to appoint a secretary at a salary of \$7,500 a year, and a general counsel at \$9,000. Also, it may employ from civil service rolls such other persons as it deems necessary to the performance of its duties. The board's preference in the matter of office



Guess-work
is eliminated
when
riveting
LIMA
BOILERS

Lima knows that every rivet that goes into a boiler has a grave responsibility and, therefore, the riveting pressure is carefully and accurately controlled.

Here is a "behind-the-scenes" view of the Lima bull-riveter. There is no guessing here as to whether the riveting pressure has done its job. Controls are automatically set to provide the proper riveting time and pressure which varies with the thickness of the plate and the size of the rivet.

This is just one of the numerous precautions taken at Lima to safeguard quality and build low maintenance into locomotives.

LIMA LOCOMOTIVE WORKS,



INCORPORATED, LIMA, OHIO

space would be the I. C. C. building or some location nearby, according to C. J. Guthridge, chief of planning and space control, Public Buildings Administration. Mr. Guthridge stated that he was looking around to see what space might be available, but he said he would be unable to meet the specific request unless the I. C. C. were disposed to offer the space voluntarily.

Tank Cars Are Ready, Says Pelley

"Let the oil companies order the cars and we'll spot them and move them to whatever destination they direct," was the answer of J. J. Pelley, president of the Association of American Railroads, to newspapermen seeking his comment on the recent statement wherein Acting Petroleum Coordinator Ralph K. Davies asserted that efforts of his office and the oil industry to press tank cars into service to alleviate threatened shortages of gasoline in the east coast area "have been unavailing." Mr. Pelley issued no formal reply to Mr. Davies, but he told inquirers that as of August 22 there were about 17,500 serviceable and available tank cars scattered throughout the country, adding that the only thing needed to place them in service is an order from the oil companies.

With respect to what might be done with the tank cars, the A. A. R. president estimated that they could move from Texas and Louisiana to the Atlantic seaboard 200,000 bbls. a day in addition to present traffic. In this connection he suggested that the petroleum could be handled in trainload lots and the empties hustled back for reloading.

Acting Coordinator Davies' statement announced a "new effort" on the part of Petroleum Coordinator Ickes' office "to obtain the maximum possible use by the oil industry of tank cars as a substitute for tankers in moving oil into the east coast territory." It went on to refer to "various statements" made from time to

time "regarding the availability of idle tank cars," adding that "strenuous efforts" to locate cars for use "have failed to uncover large numbers of the cars allegedly available." Consequently Mr. Davies has issued a formal recommendation to the petroleum industry, instructing it to proceed forthwith "on a painstaking search for this idle tank car capacity and to take whatever steps may be necessary to utilize this capacity to the fullest."

Meanwhile President Roosevelt has issued an executive order authorizing the Plantation Pipeline Company to exercise the right of eminent domain in connection with the construction of its line between Baton Rouge, La., and Greensboro, N. C.

A Railroad Editor Tries the Train

It doesn't do much good to advertise the amenities of railroad travel to railroad employees, because they ride on a strictly non-revenue basis. However, if your employees' magazine has a wide circulation among shippers and civic officers in communities along the railroad, it is well worth while to blow a horn or two. At any rate, that is what Editor Sam Boyer of the New Haven's "Along the Line" has done in his August issue. His editorial, "Call It Editorial Research," follows in full:

"Your editor's typewriter is sitting on the white sands of Falmouth and his left foot is dangling in the waters of Martha's Vineyard Sound as these lines are being written. Some men work from sun to sun, but an editor's work is never done.

"This has been an instructive weekend, in many ways. Seeking a preview of threatened gasless Sundays, your editor packed his modest little menage off on a weekend train and set out to see what life was like before the invention of the automobile.

"Before recording his findings, it is no more than fair to report that your Ed. was one of those who believed fun and a car were practically inseparable. 'You just gotta have a car,' he's been told all these

years. 'You know, getting down to the beach, and all that.'

"Quote, baloney, unquote.

"We checked our bags at the station. We found a place to stay—a swell place. Right near the beach. We called for our bags, got into our bathing suits and managed to get all set on the beach in just about the same time as it used to take us to find a parking place, scrape a couple of fenders, get mad at the kids and start a feud with the local traffic cop.

"We took walks around the countryside. We discovered swell restaurants. We rode bicycles for the first time since Casey danced with the Strawberry Blonde.

"And Sunday night! For the first time in ten years we all arrived home speaking to one another. Not a single traffic jam. No Sunday drivers. Not once did Mrs. Editor call us a beast for swearing in front of the children and nary a word did the little Editors add to their already over-developed vocabularies.

"So do your darndest, Mr. Ickes, for all we care! A lot of people are going to discover the trains and their own good legs and really carefree weekends."

July Truck Loading 35.8 Per Cent Over Last Year

The volume of revenue freight transported by motor truck in July increased 2.3 per cent over June and "almost equalled the all-time record established in May," according to American Trucking Associations. The July volume was 35.8 per cent higher than that of July, 1940.

Comparable reports were received by A. T. A. from 206 motor carriers in 39 states. The reporting carriers transported an aggregate of 1,455,307 tons in July, as against 1,422,278 tons in June, and 1,071,685 tons in July, 1940. The A. T. A. index figure, computed on the basis of the 1938-1940 average monthly tonnage of the reporting carriers, stood at 155.12 for July, as compared with June's 152.49.

Almost 76 per cent of all the tonnage transported in the month was reported by

* * * *



This "Caterpillar" Diesel Tractor Equipped with Bulldozer Switches Switches Cars Around a Sugar Plant at Woodland, Cal. The Vehicle Is Shown Hauling Two 65-Ton Freight Cars

Continued on next left-hand page

*33 1/3% increase in
train load-speed capacity*

(WITHOUT INCREASING THE SIZE OF THE LOCOMOTIVE)

by application of...

THE
FRANKLIN
SYSTEM
OF
Steam
Distribution

The steam locomotive is possessed of latent power which now can be released by The Franklin System of Steam Distribution. This system is the result of years of experimentation, research and road tests and is offered to the railroads as a means of increasing train speed and load capacity without increasing the size of the locomotive.

INCREASED DRAWBAR HORSEPOWER
(For "Train Load-Speed" Capacity)

24% AT 50 M. P. H. ←
33% AT 60 M. P. H. ←
44% AT 70 M. P. H. ←

FUEL AND WATER CONSUMPTION ARE NOT INCREASED.

BOILER SIZE
AND BOILER PRESSURE
REMAIN UNCHANGED.

DRIVING
WHEEL LOADS
REMAIN THE SAME.

"TRAIN
LOAD-SPEED" CAPACITY
INCREASED 33 1/3%.

WHEEL BASE IS UNCHANGED.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

NEW YORK
CHICAGO

carriers of general freight. The volume in this category increased 3.7 per cent over June, and 37.3 per cent over July of the previous year. Transporters of petroleum products, accounting for a little more than 10 per cent of the total tonnage reported, showed an increase of 9.1 per cent over June, and an increase of 12.5 per cent over July, 1940. Movement of new automobiles and trucks, constituting about 4½ per cent of the total tonnage, declined 17.2 per cent in July, as compared with June, but held 76.5 per cent over July of last year. Haulers of iron and steel products reported almost 4 per cent of the total tonnage; the volume of these commodities decreased 3.7 per cent under June, but represented an increase of 46.4 per cent as compared with July, 1940. Slightly more than 6 per cent of the total tonnage reported was miscellaneous commodities, including tobacco, milk, textile products, building materials, cement and household goods. Tonnage in this class decreased 3.8 per cent under June, but held 12.9 per cent over July of last year.

Better Railroad Business Helping Retirement System Finances

"The financial status of the railroad retirement system has been greatly strengthened by the improvement in railroad business during the fiscal year ending June 30, 1941," the Railroad Retirement Board said in its August "Monthly Review." Increased tax collections and fewer new applicants for annuities are both ascribed to expanding activity in the industry.

Collections under the Carriers Taxing Act increased from \$120,966,719 during the fiscal year 1940 to \$136,942,076 in the fiscal year 1941 because taxable pay rolls rose by more than \$125,000,000 in the fiscal year 1941 over the preceding year, and because the tax rate rose on January 1, 1940, from 2½ per cent to 3 per cent each on employers and employees. Furthermore, the number of new annuities beginning in the fiscal year 1941 is estimated at 16 per cent less than in the preceding fiscal year. Aggregate annuity disbursements in the fiscal year 1941 were \$121,799,776 as compared with \$114,025,141 in the fiscal year 1940.

Tax collections and interest on investments in the fiscal year 1941 exceeded disbursements for benefits and administrative expenses by \$5,862,375 even though expenses were higher in 1941 because a fund of \$9,000,000 was set up to pay railroads for verifying prior service records of employees in advance of their retirement. Tax collections and interest on investments exceeded disbursements for benefits and administrative expenses in the fiscal year 1940 by \$6,379,649 and in the fiscal year 1939 by only \$1,396,352. "Had pay rolls not increased and had new annuity awards not dropped because of better business conditions in the fiscal year ended June 30, 1941, benefit payments and administrative expenses might have exceeded tax receipts plus interest earnings, even without the deduction for the verification of prior service records," the Board said.

The estimated number of annuities beginning in the fiscal year 1941 is 18,500, compared with an estimated 22,100 for the fiscal year 1940. The decline in the fiscal year 1941 is larger than was anticipated

in the actuarial valuation of the railroad retirement system which was based on experience in the years 1937-1939. On the basis of the retirement rates developed in the valuation, the Board pointed out it was estimated that 22,494 annuities would begin in the fiscal year 1940 and 21,869 in the fiscal year 1941, a decrease of 2.8 per cent instead of the 16 per cent decrease which now seems probable.

"Improved employment conditions in the railroad industry have contributed most to this reduction," it went on. "With steady full-time employment available, retirement on an annuity becomes less desirable than when unemployment or reduced earnings are in prospect. Furthermore, as the supply of employees with seniority rights is absorbed by increasing employment, the pressure decreases on older men to retire to make jobs for younger men on furlough or short-time. Postponement of retirement by employees eligible to retire reduces the immediate drain on the retirement fund. It also reduces the ultimate total payments which will be made to these individuals since retirement at a later age shortens the period for which they will be drawing annuities."

Railroads Cannot Pay Wage Increase Demanded

In an open letter published by the Chicago Tribune on August 26, Harry G. Guthmann, professor of Finance of Northwestern University, takes issue with Alexander Whitney of the Brotherhood of Railroad Trainmen concerning the ability of the railroads to pay the wage increase demanded. Professor Guthmann's letter, in part, is as follows:

"The figures Mr. Whitney quotes as 'net operating income' are before the deduction of bond interest, and so ignore the charges which the railroads must pay if they are to stay out of receivership. Some 30 per cent of railroad mileage is actually in receivership.

"If the second half of 1941 did show the same increase in net operating income as the first half, or 188 million dollars, the total of 376 million dollars would fall far short of the 900 million dollars demanded by railroad labor.

"Furthermore, this wage increase demanded is more than the railroads have earned (even using the 'net operating income' figure) in any year since 1929.

"The railroads have been warned by the government that the present increase in earnings is clearly due to the war boom and temporary, and therefore should not be paid out as dividends (almost non-existent since 1930), but should be used to pay off pressing debts and rehabilitate property neglected during a decade of hard times. Railroad labor is collecting higher wage rates, higher annual compensation than in prosperous 1929, although the cost of living is lower and the railroads, unlike most industries, are still suffering extreme financial hardships.

"And when will labor give up their 'featherbed' rules that extract money for work not done?

"The railroad unions have declared against government ownership. The present negotiations are a test of their intelligence and sincerity."

Construction

CHICAGO, ROCK ISLAND & PACIFIC and the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Howard, Needles, Tammen & Bergendoff, consulting engineers, Kansas City, Mo., have been employed to make preliminary surveys for the location of a new bridge for both roads over the Missouri river at Kansas City. Tentative plans for the new bridge and a new line approximately 4½ miles long from Birmingham, Mo., to Air Line Junction, which will give the Rock Island a through route with direct east and west entrances into Kansas City, was described in the *Railway Age* of November 16, 1940.

MAINE CENTRAL.—This company has awarded a contract to the Tredennick-Billings Company of Boston, Mass., for the erection of a new passenger station at Bath, Maine, at an estimated cost of \$35,000.

NEW YORK CENTRAL.—This company has awarded a contract for reconstruction of the suspension bridge carrying state highway No. 475 over its tracks at Lewiston, N. Y., to the Fred Ballard Construction Company of Syracuse, N. Y.

NEW YORK, NEW HAVEN & HARTFORD.—This company has authorized the rehabilitation of circuit breakers in its electrified zone at estimated cost of \$151,000. The project will be carried out by the company's own forces.

SOUTHERN PACIFIC.—The Bureau of Reclamation of the Department of the Interior, Denver, Colo., has awarded a contract amounting to \$66,585 to the Chicago Bridge & Iron Co., Chicago, for the construction of four steel water tanks, an oil-storage tank and a steel water reservoir at four sidings on the relocated line of the Southern Pacific north of Redding, Cal. A description of the work was published in the *Railway Age* of July 5, when the request for bids was reported.

UNITED STATES BUREAU OF RECLAMATION, BOISE, IDAHO.—A low bid of \$439,294 was submitted by the J. L. McLaughlin Company of Great Falls, Montana, under specification No. 974, for the construction of earth work, structures, track, and telegraph line for the relocation of the Idaho Northern branch of the Oregon Short Line Railroad (Union Pacific, lessee) from Cascade to Donnelly, Idaho. The request for bids on this project was reported in the *Railway Age* of July 12.

UNION PACIFIC.—A contract amounting to \$439,294 has been awarded J. L. McLaughlin, Great Falls, Mont., by the Bureau of Reclamation of the Department of the Interior for the relocation of 14.6 miles of a branch line of the Oregon Short Line (part of the Union Pacific) around the site of Cascade reservoir on the Payette river in Idaho between Cascade, Idaho, and Donnelly. The contract covers the excavation of more than 610,000 cu. yd. of material, the construction of a bridge over Payette river, the construction of 10 miles of new telegraph line, the placing of 5,270 lin. ft. of corrugated metal pipe, the laying

Continued on next left-hand page

SUPPOSE EVERY RAILROAD



HAD ITS OWN ARCH BRICK DESIGN

Look about and see how standards on many items vary with each railroad. « « « Think of the confusion and expense involved if this also applied to Arch Brick. « « « If a road ran short, it would wait for weeks for its special brick to be made! At joint terminals, the confusion would be unendurable. « « « Years ago, American Arch Company foresaw such a situation and fostered the standardization of Arch tubes and of Arch Brick sizes and designs. « « « Think of the grief this good work saved. « « « In everything having to do with Arch Brick, American Arch Company for 32 years has served the railroads. This service has had and still has a high value.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

**HARBISON-WALKER
REFRACTORIES CO.**
Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**
60 EAST 42nd STREET, NEW YORK, N. Y.
*Locomotive Combustion
Specialists*

of 14.6 miles of track and the construction of sidings and a station. The bridge over the Payette river will require 115½ tons of structure steel. Ties, rails, poles and other materials required will be furnished by the government. The relocation is to be completed by June, 1942.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—A contract has been awarded H. B. Deal & Co., Inc., St. Louis, Mo., for the construction of a 49-ft. by 105-ft. one-story brick Diesel enginehouse at the Bremen Avenue yard at St. Louis.

Supply Trade

J. L. Holloway, secretary of the Crane Company, Chicago, has been elected vice-president in charge of finance and W. H. Winslow, Jr., assistant secretary, has been promoted to secretary, to succeed Mr. Holloway.

Howard J. Mullin, assistant to the sales manager for the Carnegie-Illinois Steel Corporation at Kansas City, Mo., has been appointed assistant to the manager of sales (Pittsburgh, Pa.), with headquarters at Detroit, Mich.

W. E. Lynch has been placed in charge of the newly formed railroad rolling stock section and G. R. McDonald, in charge of the substations, transmission and distribution systems section of the transportation department of the General Electric Company at Erie, Pa. Mr. Lynch

ice and followed this work up to the time of his new promotion. In his new position, Mr. Lynch will be responsible for locomotive application and sales to railroads, including electrics, Diesel-electrics, complete electrifications and electric equipments for railroad locomotives.

Mr. McDonald graduated from the California Institute of Technology in 1918.



G. R. McDonald



W. E. Lynch

attended Bradley Polytechnic Institute at Peoria, Ill., for two years and was graduated from the University of Illinois in 1926. He entered the test course of the General Electric Company at Schenectady, N. Y., in July of that year and took the advanced engineering course in 1927 and 1928. He transferred to the transportation department in October, 1928, and, in 1931, after three years' work on urban-transit and gas-electric cars, was assigned to heavy-track equipment and did considerable work on the Pennsylvania electrification. Two years ago, he became interested in the application of Diesel-electric locomotives for switching and main-line serv-

He entered the student test department of the General Electric Company in March, 1919, and was transferred to the switchboard engineering department in December, 1920. In 1927, he supervised the installation of the substations on the Anglo-Chilean Nitrate Corporation electrification in Chile for the International General Electric Company. In 1928, he transferred to the transportation engineering department and during the past 12 years has been closely associated with the engineering of the substations transportation, and distribution for such large electrifications as the Cleveland Union Terminal, Delaware, Lackawanna & Western, the Paulista & Sorocabana railroads in Brazil, as well as several installations for the New York Board of Transportation.

William B. Given, Jr., has been elected president of the National Bearing Metals Corporation to succeed J. B. Strauch. Mr. Strauch was elected chairman of the board, which position was previously held by Mr. Given. Mr. Given is president of the American Brake Shoe & Foundry Co., which company owns a controlling interest in the National Bearing Metals Corporation.

TRADE PUBLICATION

BLUEPRINTING EQUIPMENT.—The C. F. Pease Company, Chicago, has published a 156-page catalog, M-41, describing its arc-lamp continuous blueprinting, washing and drying equipment and its arc-lamp printers for direct process prints. Also described are high pressure quartz tube and low pressure mercury vapor tube blueprinting and direct process printing machines and various accessories, including blueprint and negative paper and cloth, Multazo dry direct process paper, photographic lamps and various types of drafting room furniture.

Equipment and Supplies

LOCOMOTIVES

THE CHICAGO & NORTH WESTERN has ordered one 80-ton Diesel-electric locomotive of 650-hp. from the Whitcomb Locomotive Company.

THE UNITED STATES NAVY, Bureau of Supplies and Accounts, is asking for bids, September 12, on four railroad cars for delivery at San Diego, Cal.—Schedule 8428.

THE UNITED STATES NAVY, Bureau of Supplies and Accounts, is asking for bids, September 5, on one fireless steam locomotive for delivery at Charleston, S. C.—Schedule 8427.

THE UNITED STATES WAR DEPARTMENT has placed orders for twenty 20-ton gasoline-mechanical locomotives of 190-hp. as follows:

10*—Whitcomb Locomotive Company
5—Davenport Besler Corporation
5—Vulcan Iron Works

* Previously reported in *Railway Age* of August 23.

FREIGHT CARS

THE READING has placed an order for 58 cabooses with the company's own shops.

THE UNION PACIFIC is inquiring for 100 cabooses.

THE SOUTHERN has ordered an additional eleven 40½-ft. box cars of 50 tons' capacity from the Pullman-Standard Car Manufacturing Company.

THE MICHIGAN LIMESTONE & CHEMICAL Co. has on order twenty 50-cubic yard dump cars with the Austin-Western Road Machinery Co.

THE UNITED STATES ARMY order for dump cars placed with the Austin-Western Road Machinery Co. at cost of \$12,193, as reported in the *Railway Age* of August 16, was for four 12-yard two-way dump cars.

IRON AND STEEL

THE BESSEMER & LAKE ERIE has placed an order for 5,000 tons of rails with the Carnegie-Illinois Steel Corporation.

MACHINERY AND TOOLS

THE UNITED STATES ARMY, Engineering Department, has placed orders for locomotive cranes with the Ohio Locomotive Crane Company, Bucyrus, Ohio, at cost of \$134,490 and with the Star Machinery Company, Seattle, Wash., at cost of \$18,000.

MOTOR VEHICLES

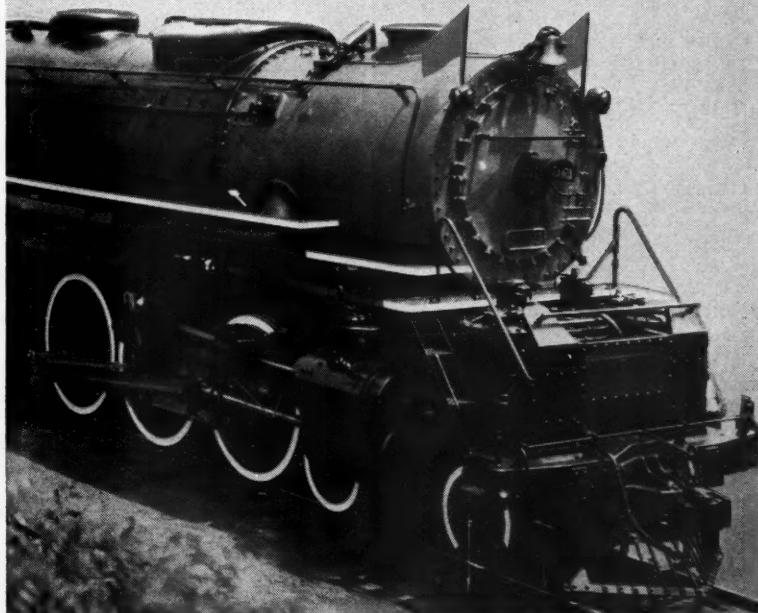
THE NORFOLK-SOUTHERN BUS CORPORATION has ordered two motor coaches from the a. c. f. Motors Company.

(News continued on page 362)

The Elesco Exhaust Steam Injector

-AN OPEN TYPE of FEEDWATER HEATER

One of many D & H locomotives equipped
with the Elesco exhaust steam injector



SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE
SUPERHEATER
C O M P A N Y

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street • NEW YORK
122 S. Michigan Avenue • CHICAGO
...
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

It operates with exhaust steam on the non-lifting live steam injector principle . . . with low maintenance cost as compared with other open types of feedwater heaters. In combination with a small cold water pump, it can be located anywhere on the locomotive.

The Elesco exhaust steam injector uses exhaust steam when available; when it is not available, it uses live steam, reduced in pressure. These changes are completely automatic. This insures *hot water to boiler at all times*.

It is simple in operation—dependable—efficient.

More than 20,000 exhaust steam injectors of this type have been applied to locomotives throughout the world.

Specify it for your *new* locomotives . . . apply it to your existing locomotives. It adds capacity and capacity is needed now.



Freight Operating Statistics of Large Steam Railways—Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles		Car-miles		Gross excluding locomotives and tenders		Ton-miles (thousands)		Number of road locomotives on line		
			Principal and helper	Light	Loaded (thous. s)	Per cent loaded	Net revenue and non-revenue	Serviceable	Un-serv. iceable	Per cent un-serviceable	Not stored	Stored	
New England Region:													
Boston & Albany.....1941	362	165,264	174,575	12,516	3,754	65.3	224,528	85,833	61	2	23	26.7	
1940	362	125,439	129,799	9,180	2,868	65.4	162,284	56,142	59	2	25	29.1	
Boston & Maine	1,894	322,529	370,411	35,075	12,488	69.6	711,666	282,007	133	..	35	20.8	
1940	1,892	270,723	306,255	24,322	9,554	68.6	541,890	205,269	116	..	63	35.2	
N. Y., New H. & Hartf.†.....1941	1,829	441,885	548,674	36,091	16,591	67.8	927,554	362,753	210	..	47	19.4	
1940	1,842	336,666	420,959	27,087	12,091	65.6	676,421	249,936	177	12	61	24.7	
Great Lakes Region:													
Delaware & Hudson.....1941	849	301,690	355,814	39,853	11,337	65.3	753,739	362,051	134	40	69	28.4	
1940	846	234,829	311,691	34,296	8,283	63.9	522,183	248,136	133	39	70	28.9	
Del., Lack. & Western.....1941	983	336,458	446,691	63,315	15,746	71.9	931,542	405,253	144	3	66	31.0	
1940	983	346,119	388,190	51,895	12,624	67.4	750,716	302,490	138	5	60	29.6	
Erie (incl. Chi. & Erie)‡.....1941	2,257	809,806	857,811	54,882	36,822	67.9	2,265,896	908,842	256	11	158	37.2	
1940	2,268	662,780	702,308	50,782	29,624	66.3	1,816,695	678,097	216	27	184	43.1	
Grand Trunk Western.....1941	1,023	270,466	274,246	1,816	8,916	63.6	548,646	197,534	71	..	19	21.1	
1940	1,023	217,677	219,882	1,258	6,861	62.4	419,018	145,374	73	5	21	21.2	
Lehigh Valley	1,251	388,216	425,934	69,569	16,538	68.4	1,048,694	471,680	123	16	44	24.0	
1940	1,252	327,179	359,663	54,183	12,999	65.5	829,519	356,289	128	8	85	38.5	
New York Central	10,521	3,114,479	3,317,217	222,663	114,847	61.9	7,734,432	3,349,373	1,002	81	300	21.7	
1940	10,565	2,569,236	2,758,833	181,292	89,118	60.7	6,039,953	2,563,352	830	171	386	27.8	
New York, Chi. & St. L.	1,672	609,827	627,952	8,397	23,836	67.8	1,442,105	582,798	142	1	20	12.3	
1940	1,672	496,382	502,904	6,536	18,318	63.5	1,114,961	404,719	120	17	29	17.5	
Pere Marquette	2,068	400,106	415,498	9,691	11,660	66.7	721,109	292,298	127	1	25	16.3	
1940	2,080	325,324	334,226	7,100	9,091	61.2	583,112	217,163	109	4	40	26.1	
Pitts. & Lake Erie.....1941	232	100,241	104,015	270	4,387	64.7	370,693	216,787	41	..	17	29.3	
1940	233	80,015	82,778	—	3,486	63.4	301,250	176,515	35	18	18	25.4	
Wabash*	2,397	647,732	662,635	13,427	22,557	68.1	1,335,117	502,913	144	11	104	40.2	
1940	2,397	541,005	553,141	11,021	17,426	63.9	1,044,918	356,363	139	16	111	41.7	
Central Eastern Region:													
Baltimore & Ohio	6,245	1,924,673	2,421,783	247,963	64,795	63.6	4,478,635	2,084,696	800	89	243	21.5	
1940	6,261	1,516,558	1,899,945	212,879	50,116	61.6	3,519,540	1,597,038	672	94	425	35.7	
Central of New Jersey†	680	212,375	239,344	44,708	6,892	61.5	490,296	249,181	85	7	52	36.1	
1940	679	161,290	182,143	34,151	5,197	60.8	366,640	175,166	75	8	70	45.8	
Chicago & Eastern Ill.	925	181,329	181,904	3,119	5,069	68.0	306,673	129,355	60	4	27	29.7	
1940	925	166,218	166,566	2,910	4,237	66.4	259,167	106,985	58	3	33	35.1	
Elgin, Joliet & Eastern	390	127,829	129,224	1,224	3,535	60.5	275,307	139,476	68	..	9	11.7	
1940	390	97,215	98,724	1,222	2,502	60.0	192,461	94,620	53	..	24	31.2	
Long Island	375	28,955	30,265	18,912	307	53.1	23,026	9,177	31	9	8	16.7	
1940	375	23,612	25,335	16,214	253	50.6	19,545	7,545	34	8	6	12.5	
Pennsylvania System	9,960	3,950,164	4,685,205	566,509	154,808	63.9	10,646,659	4,945,781	1,689	20	437	20.4	
1940	9,983	2,998,058	3,631,141	428,064	116,997	61.1	8,151,731	3,617,215	1,301	143	790	35.4	
Reading	1,430	505,832	560,707	69,935	16,133	63.8	1,130,347	570,341	252	8	77	22.8	
1940	1,442	401,397	446,205	54,290	12,049	61.5	877,852	430,510	211	13	150	50.1	
Pocahontas Region:													
Chesapeake & Ohio	3,053	1,013,988	1,075,155	50,221	49,436	57.5	4,171,823	2,317,154	419	21	64	12.7	
1940	3,044	887,092	935,846	43,475	42,560	57.2	3,568,053	1,960,910	375	47	81	16.1	
Norfolk & Western	2,169	785,945	827,676	46,569	36,528	57.9	3,102,674	1,652,705	313	14	18	5.2	
1940	2,169	646,803	673,410	34,971	29,890	58.0	2,486,234	1,303,879	282	46	24	6.8	
Southern Region:													
Atlantic Coast Line	5,071	750,610	760,642	10,296	17,604	63.9	1,074,059	415,240	288	10	43	12.6	
1940	5,076	606,506	612,230	8,881	12,979	62.8	770,618	273,584	274	33	41	11.8	
Central of Georgia†	1,831	303,426	308,534	5,974	6,913	70.9	406,041	166,599	98	..	19	16.2	
1940	1,831	260,344	261,793	4,067	5,497	69.6	315,344	123,046	100	..	20	16.7	
Illinois Central (incl. Yazoo & Miss. V.)	6,521	1,392,501	1,397,523	24,895	44,019	64.4	2,812,188	1,194,502	527	20	163	23.0	
1940	6,557	1,182,312	1,185,752	22,315	34,246	61.8	2,193,013	884,423	541	78	189	23.4	
Louisville & Nashville.....1941	4,794	1,421,076	1,543,652	37,958	36,454	59.8	2,580,714	1,215,172	386	18	55	12.0	
1940	4,862	1,157,571	1,255,125	31,543	29,427	59.5	2,077,921	971,150	370	28	108	21.3	
Seaboard Air Line*	4,298	720,014	760,368	4,669	18,450	64.6	1,145,647	461,768	246	..	56	18.5	
1940	4,301	526,425	549,321	3,822	13,111	63.8	788,605	297,942	239	24	40	13.2	
Southern	6,521	1,697,713	1,729,415	26,938	40,164	68.5	2,362,403	996,095	530	1	125	19.1	
1940	6,548	1,321,995	1,342,983	20,801	22,988	65.9	1,742,731	705,061	499	2	144	22.3	
Northwestern Region:													
Chi. & North Western†	8,305	919,684	949,378	20,121	30,389	65.3	1,931,301	805,308	309	20	233	41.5	
1940	8,319	805,355	837,946	15,324	24,923	63.5	1,594,216	598,152	290	45	271	44.7	
Chicago Great Western	1,447	265,486	268,078	4,682	8,378	64.4	523,266	197,064	65	4	12	14.8	
1940	1,447	230,735	231,861	4,834	6,796	63.3	416,578	148,402	63	17	19.8		
Chi., Milw., St. P. & Pac.†.....1941	10,847	1,371,865	1,431,096	58,035	43,448	62.1	2,867,823	1,189,276	449	32	118	19.7	
1940	10,874	1,113,368	1,163,449	43,423	34,109	63.7	2,143,691	857,112	392	94	121	19.9	
Chi., St. P., Minneap. & Om.	1,618	212,432	223,088	11,363	5,569	68.5	338,105	134,024	100	12	20	15.2	
1940	1,619	193,206	200,375	10,325	4,806	66.7	297,223	116,331	98	30	10	7.2	
Great Northern	7,978	979,059	970,858	29,199	36,715	62.3	2,696,187	1,266,763	347	41	119	23.5	
1940	7,973	767,917	765,345	24,542	28,331	62.4	2,070,419	971,464	322	69	134	25.5	
Minneap., St. P. & S. St. M.†.....1941	4,251	416,985	423,703	5,22									

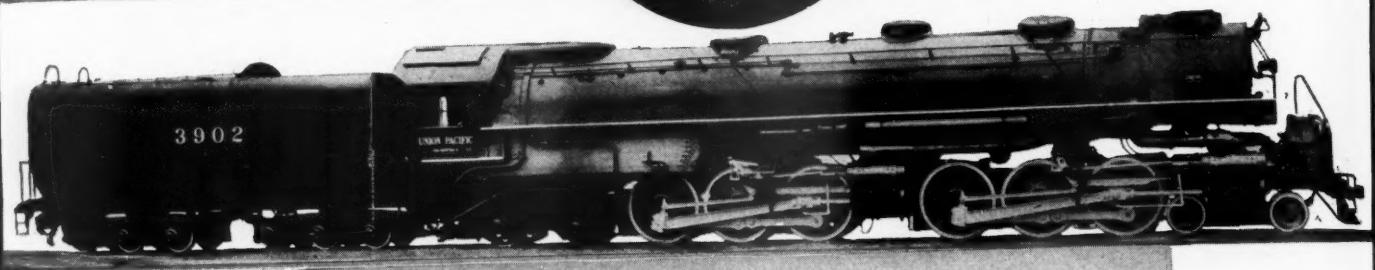
for the Month of June, 1941, Compared with June, 1940

Number of freight cars on line				Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-hour, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per road car-day	Net ton-miles per locomotive-day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	
Region road, and year	Home	Foreign	Total	Per cent unservicable	Per cent un-servicable	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per road car-day	Net ton-miles per locomotive-day	Loco-motives and tenders	
New England Region:												
Boston & Albany	655	5,654	6,309	1.9	23,521	1,372	524	22.9	450	30.1	7,904	
1940	904	4,796	5,700	1.7	21,289	1,302	450	19.6	334	26.1	5,170	
Boston & Maine	3,492	10,402	13,894	2.7	30,716	2,216	878	22.6	686	43.6	4,963	
1940	5,259	7,886	13,145	6.0	28,389	2,007	760	21.5	538	36.5	3,616	
N. Y., New Hav. & Hartf. [†]	1941	3,956	19,616	23,572	2.7	30,068	2,130	833	21.9	529	35.7	
1940	6,316	11,876	18,192	4.1	29,859	2,042	755	20.7	461	34.0	4,523	
Great Lakes Region:												
Delaware & Hudson	6,142	5,434	11,576	4.5	39,984	2,517	1,209	31.9	1,048	50.3	14,215	
1940	8,428	3,934	12,362	4.0	34,219	2,237	1,063	30.0	676	35.3	9,777	
Del., Lack. & Western	7,331	9,948	17,279	3.5	41,505	2,438	1,061	25.7	772	41.7	13,742	
1940	10,641	5,874	16,515	6.5	38,817	2,192	883	24.0	598	37.0	10,257	
Erie (incl. Chi. & Erie) [†]	1941	11,152	20,721	31,873	2.3	48,614	2,822	1,132	24.7	951	56.8	
1940	15,046	13,485	28,531	3.7	47,735	2,764	1,032	22.9	783	51.6	9,966	
Grand Trunk Western	3,083	9,152	12,235	6.1	38,153	2,047	737	22.2	557	39.6	6,436	
1940	3,922	5,787	9,709	9.0	37,316	1,933	671	21.2	479	36.2	4,737	
Lehigh Valley	6,255	13,126	19,381	1.0	50,522	2,756	1,239	28.5	795	40.7	12,568	
1940	9,516	9,638	19,154	1.7	48,867	2,579	1,107	27.4	636	35.5	9,486	
New York Central	64,561	76,891	141,452	7.2	42,157	2,503	1,084	29.2	787	43.6	10,612	
1940	85,674	55,527	141,201	12.6	40,254	2,372	1,007	28.8	604	34.6	8,088	
N. Y., Chicago & St. Louis	1941	3,942	10,488	14,430	2.4	45,445	2,370	958	24.5	1,358	81.8	11,619
1940	6,015	8,020	14,035	4.0	42,347	2,250	817	22.1	961	68.5	8,069	
Pere Marquette	4,936	9,417	14,353	2.8	31,309	1,815	736	25.1	664	39.7	4,711	
1940	8,433	6,165	14,598	3.3	31,036	1,797	669	23.9	488	33.4	3,480	
Pittsburgh & Lake Erie	6,798	8,154	14,952	10.0	47,042	3,726	2,179	49.4	489	15.3	31,148	
1940	11,837	5,583	17,420	25.2	50,870	3,766	2,206	50.6	338	10.5	25,253	
Wabash*	8,252	13,114	21,366	0.9	42,726	2,080	784	22.3	788	51.9	6,994	
1940	12,465	8,980	21,445	7.0	40,895	1,945	663	20.5	563	43.1	4,956	
Central Eastern Region:												
Baltimore & Ohio	42,231	39,304	81,535	3.1	31,823	2,371	1,103	32.2	852	41.7	11,127	
1940	56,271	26,999	83,270	10.4	32,506	2,354	1,068	31.9	647	32.9	8,503	
Central of New Jersey†	5,010	16,742	21,752	3.2	30,577	2,405	1,222	36.2	406	18.3	12,215	
1940	9,019	10,910	19,929	21.9	30,144	2,403	1,148	33.7	291	14.2	8,599	
Chicago & Eastern Illinois	2,832	3,582	6,414	5.6	31,985	1,709	721	25.5	672	38.7	4,661	
1940	3,323	3,140	6,463	7.9	29,745	1,565	646	25.3	558	33.3	3,855	
Elgin, Joliet & Eastern	9,769	8,154	17,923	4.2	17,141	2,218	1,124	39.5	261	10.9	11,921	
1940	9,223	4,901	14,124	4.0	18,405	2,023	994	37.8	229	10.1	8,087	
Long Island	67	4,327	4,394	0.4	6,072	817	326	29.9	75	4.7	816	
1940	137	2,597	2,734	1.1	5,659	845	326	29.8	87	5.8	671	
Pennsylvania System	153,951	87,431	241,382	9.7	38,518	2,765	1,285	31.9	685	33.5	16,552	
1940	189,184	59,951	249,135	16.0	40,564	2,779	1,233	30.9	478	25.3	12,078	
Reading	16,642	19,608	36,250	8.1	28,538	2,245	1,133	35.4	526	22.8	13,295	
1940	23,062	11,255	34,317	17.6	28,770	2,194	1,076	35.7	417	19.0	9,952	
Pocahontas Region:												
Chesapeake & Ohio	37,836	16,475	54,311	1.2	61,109	4,165	2,313	46.9	1,401	52.0	25,299	
1940	45,041	14,854	59,895	1.9	59,932	4,068	2,236	46.1	1,081	41.0	21,473	
Norfolk & Western	30,175	7,323	37,498	1.2	63,430	4,008	2,135	45.2	1,426	54.4	25,399	
1940	36,566	6,067	42,633	3.9	60,701	3,893	2,041	43.6	1,024	40.5	20,038	
Southern Region:												
Atlantic Coast Line	9,831	9,881	19,712	10.2	24,961	1,436	555	23.6	651	43.2	2,730	
1940	13,405	6,172	19,577	18.4	23,172	1,274	452	21.1	442	33.4	1,797	
Central of Georgia†	3,162	6,608	9,770	0.4	26,137	1,345	552	24.1	632	37.0	3,033	
1940	4,786	3,934	8,720	2.6	24,648	1,216	475	22.4	516	33.1	2,240	
Illinois Central (incl. Y. & M. V.)	25,365	20,070	45,435	2.2	34,075	2,042	867	27.1	878	50.2	6,106	
1940	29,617	14,207	43,824	3.7	31,726	1,874	756	25.8	647	40.6	4,496	
Louisville & Nashville	28,718	12,411	41,129	3.6	29,730	1,817	856	33.3	988	49.6	8,449	
1940	36,296	11,466	47,762	11.9	29,649	1,797	840	33.0	680	34.6	6,658	
Seaboard Air Line*	8,790	9,957	18,747	2.4	28,465	1,621	653	25.0	781	48.4	3,581	
1940	11,220	5,988	17,208	4.3	27,064	1,521	575	22.7	573	39.6	2,309	
Southern	19,592	22,741	42,333	6.4	24,202	1,402	591	24.8	753	44.4	5,092	
1940	23,039	17,907	40,946	8.0	24,005	1,326	536	23.7	573	36.2	3,589	
Northwestern Region:												
Chicago & North Western†	31,076	26,365	57,441	6.3	32,674	2,163	902	26.5	463	26.8	3,232	
1940	34,642	19,665	54,307	9.2	30,899	2,036	764	24.0	375	24.6	2,397	
Chicago Great Western	1,830	4,214	6,044	1.9	36,095	1,974	743	23.5	1,118	73.9	4,540	
1940	2,409	3,237	5,646	2.0	33,546	1,810	645	21.8	879	63.5	3,419	
Chi., Milw., St. P. & Pac.†	38,162	26,782	64,944	1.1	34,309	2,101	871	27.4	619	36.4	3,655	
1940	43,007	18,062	61,069	2.7	32,046	1,935	774	25.1	469	29.3	2,627	
Chi., St. P., Minn. & Omaha	1,686	6,386	8,072	6.1	21,610	1,606	636	24.1	557	33.8	2,761	
1940	3,306	5,412	8,718	9.2	20,608	1,549	606	24.2	449	27.8	2,395	
Great Northern	28,959	10,250	39,209	3.3	43,791	2,765	1,299	34.5	1,087	50.6	5,293	
1940	33,874	9,116	42,990	7.4	42,628	2,711	1,272	34.3	752	35.1	4,061	
Minneap., St. P. & S. St. M.†	10,820	5,131	15,951	3.0	28,673	1,729	762	27.6	663	36.7	2,487	
1940	12,296	4,281	16,577	4.0	25,658	1,485	629	25.6	472	28.1	1,797	
Northern Pacific	25,483	6,810	32,293	7.2	32,386	2,328	984	26.7	784	43.6	3,958	
1940	29,520	5,619	35,139	8.8	36,270	2,159	853	24.7	538	33.0	2,947	
Central Western Region:												
Alton	1,071	6,475	7,546	4.2	37,938	1,498	616	24.9	647	40.3	5,101	
1940	1,550	5,504	7,054	5.7	36,721	1,396	490	22.1	465	33.2	3,511	
Atch., Top. & S. Fe. (incl. G. C. & S. F. & P. & S. F.)	61,428	28,247	89,675	4.6	38,389	2,008	707	23.3	725	50.5	4,587	
Chicago, Burl., & Quincy	21,910	20,260	42,170	2.5	35,524	2,066	878	26.8	826	45.9	3,913	
1940	27,579	15,560	43,139	7.1	33,538	1,892	757	24.6	579	35.9	2,783	
Chi., Rock I. & Pac.†	19,180	16,059	35,239	2.7	32,445	1,756	679	24.8	821	53.6	3,530	
1940	21,398	13,156	34,554	3.9	31,161	1,662	611	23.2	650	46.6	2,755	
Denver & Rio Gr. Western†	10,243	3,523	13,766	3.6	33,713	1,944	872	27.6	614	31.0	3,295	
1940	11,789	3,39										

HIGH-SPEED HEAVY D

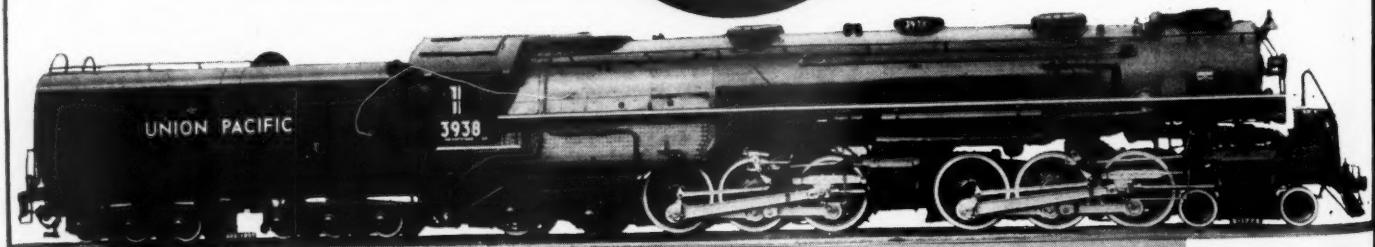
15

Delivered in
1936



25

Delivered in
1937



20

MORE
To Come

Now



DUTY FREIGHT POWER on the Union Pacific



DURING the fall of 1936, the Union Pacific received 15 single-expansion articulated locomotives of the 4-6-6-4 type from the American Locomotive Company.

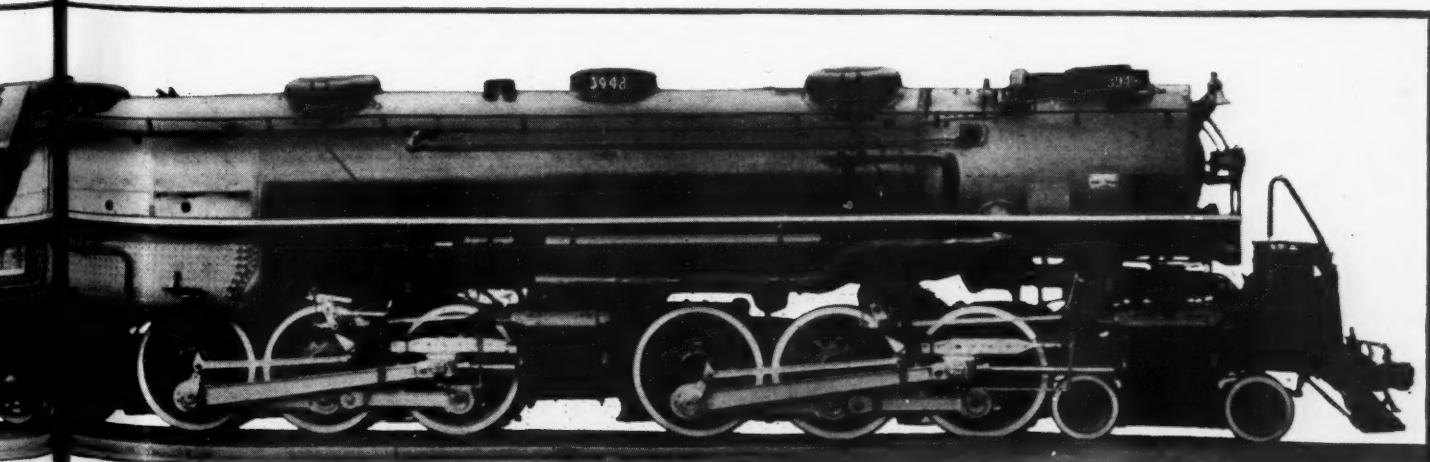
Designed for hauling high-speed freight traffic in mountain territory, these engines were quick to prove themselves eminently satisfactory — and to such an extent that 25 similar locomotives were delivered to the Union Pacific in 1937.

The continued successful performance in high speed through freight service with lowest possible maintenance both for locomotive and right-of-way now justifies a further investment in this type of motive power.

20 More are Now on Order

AMERICAN LOCOMOTIVE COMPANY
30 CHURCH STREET

NEW YORK, N. Y.



Financial

ATCHISON, TOPEKA & SANTA FE.—*Equipment Trust Certificates.*—This road awarded a \$20,000,000 issue of equipment trust certificates to Salomon Brothers & Hutzler and associates on a bid of 100.434 for 15 $\frac{1}{2}$ per cent on August 21. The certificates were re-offered publicly at prices to yield 0.25 to 1.875 per cent, according to maturity.

BALTIMORE & OHIO.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the West Virginia & Pittsburgh branch of its Monongah Division extending from Bendale, W. Va., to Burnsville, 23.4 miles.

BALTIMORE & OHIO.—*Abandonment by the Belington & Northern.*—The Belington & Northern has been authorized by Division 4 of the Interstate Commerce Commission to abandon its entire line extending from Belington, W. Va., to the end of the line, 1.2 miles. At the same time Division 4 also authorized the Baltimore & Ohio to abandon operation of the line of the Belington & Northern and to abandon operation over 0.2 mile of track owned by the Western Maryland in Belington, W. Va.

BANGOR & AROOSTOOK.—*Bonds.*—This company has been authorized by Division 4 of the Interstate Commerce Commission (1) to issue \$773,000 of consolidated refunding mortgage four per cent bonds, all or any part thereof to be exchanged for a like principal amount of five per cent bonds now in the treasury; and (2) to pledge and repledge from time to time to and including December 31, 1942, as collateral security for any short-term note all or any part of such consolidated refunding mortgage four per cent bonds, and all or any part of the \$836,000 of five per cent and four per cent bonds now in the treasury.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$4,300,000 of 15 $\frac{1}{2}$ per cent equipment trust certificates, maturing in 10 equal annual installments of \$430,000 on August 1 in each of the years from 1942 to 1951, inclusive. The issue has been sold at 100.333 to Harris, Hall & Co., Inc., and its associates, making the average annual cost to the company approximately 1.56 per cent.

CHICAGO & NORTH WESTERN.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon a 2.3-mile line from Strawbridge, Wis., to a point near Benton.

ERIE.—*Bonds.*—This road has announced that it will open bids September 15 on an issue of \$190,000 of refunding and improvement bonds to be dated September 1 and to mature serially 1942 to 1956, inclusive.

ERIE.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has fixed, for the time being, without prejudice to

the fixing of final maximum limits, a lump-sum of \$1,000,000 for expenses to be incurred by the reorganization managers in carrying out a final plan of reorganization for this company under section 77 of the Bankruptcy Act. The reorganization managers had requested that Division 4 allocate them \$1,443,440 for reorganization expenses. A breakdown of the sum shows that the largest single item of reorganization expense will be some \$990,000 for taxes, fees, and other charges prescribed by law, other than those payable to the federal government.

GRAND TRUNK WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this road to abandon an 0.9-mile line across the Saginaw river in Bay City, Mich. In lieu of strengthening the bridge, threatened by proposed War Department dredging operations, the road plans to relocate its Bay City passenger and freight facilities on the west side of the river.

GULF, MOBILE & OHIO-ILLINOIS CENTRAL.—*Abandonment and Operation.*—The Gulf, Mobile & Ohio and the Yazoo & Mississippi Valley have been authorized by Division 4 of the Interstate Commerce Commission to abandon some operations and to construct some connecting tracks in Meridian, Miss. to carry out a joint plan of rearranging their terminal operations. The plan provides for the abandonment by the G. M. & O. of 2.9 miles of track in Meridian, Miss. Joint operations over each other's lines in the city is also authorized.

KANSAS, OKLAHOMA & GULF OF TEXAS.—*Extension of Bond Maturity.*—This road has applied to the Interstate Commerce Commission for authority to extend from January 3, 1941, until January 1, 1978, the maturity date of \$483,500 of first mortgage five per cent bonds, all of which are owned by the Kansas, Oklahoma & Gulf (the Oklahoma corporation).

SEABOARD AIR LINE.—*Abandonment by the Georgia, Florida & Alabama.*—The Georgia, Florida & Alabama and the Seaboard Air Line, respectively, have asked the Interstate Commerce Commission for authority to abandon the following branches and the operation thereof:

1. The Carrabelle branch extending from Tallahassee, Fla., to Carrabelle, 48.4 miles, and

2. The East Quincy branch extending from Havana, Fla., to East Quincy, 11.3 miles.

WASHINGTON WESTERN.—*Deficit Status.*—Division 4 of the Interstate Commerce Commission has found that this company did not sustain a decrease in its net railway operating income while under private operation in the Federal control period and is not entitled to the benefits of section 204 of the Transportation Act of 1920, as amended January 7, 1941.

Dividends Declared

Chesapeake & Ohio.—Common, 75¢, quarterly; 4 Per Cent Non-Cumulative Series A Preferred, \$1.00, quarterly, both payable October 1 to holders of record September 8.

Delaware & Bound Brook, \$2.00, quarterly, payable August 20 to holders of record August 18.

Erie & Pittsburgh.—7 Per Cent Guaranteed, 87 $\frac{1}{2}$ ¢, quarterly, payable September 10 to holders of record August 30.

Portland & Ogdensburg.—Guaranteed (Irregular) 32¢, payable August 30 to holders of record August 20.

Union Pacific.—Common, \$1.50; 4 Per Cent Preferred, \$2.00, semi-annually, both payable October 1 to holders of record September 2.

Average Prices of Stocks and Bonds

	Aug. 26	Last week	Last year
Average price of 20 representative railway stocks..	30.81	29.12	28.53
Average price of 20 representative railway bonds..	64.53	64.61	57.34

Railway Officers

OPERATING

E. T. Barrett, division engineer on the Denver & Rio Grande Western at Grand Junction, Colo., has been appointed acting trainmaster, with the same headquarters.

J. R. Casey has been appointed chief dispatcher of the Atlantic Coast Line, with headquarters at Tampa, Fla., succeeding Ray Dempsey, deceased.

E. C. Riddle has been appointed assistant superintendent on the Union Pacific, with headquarters at Pocatello, Idaho, succeeding John W. Myers, whose promotion to superintendent of the Idaho division, with the same headquarters, was reported in the *Railway Age* of August 2.

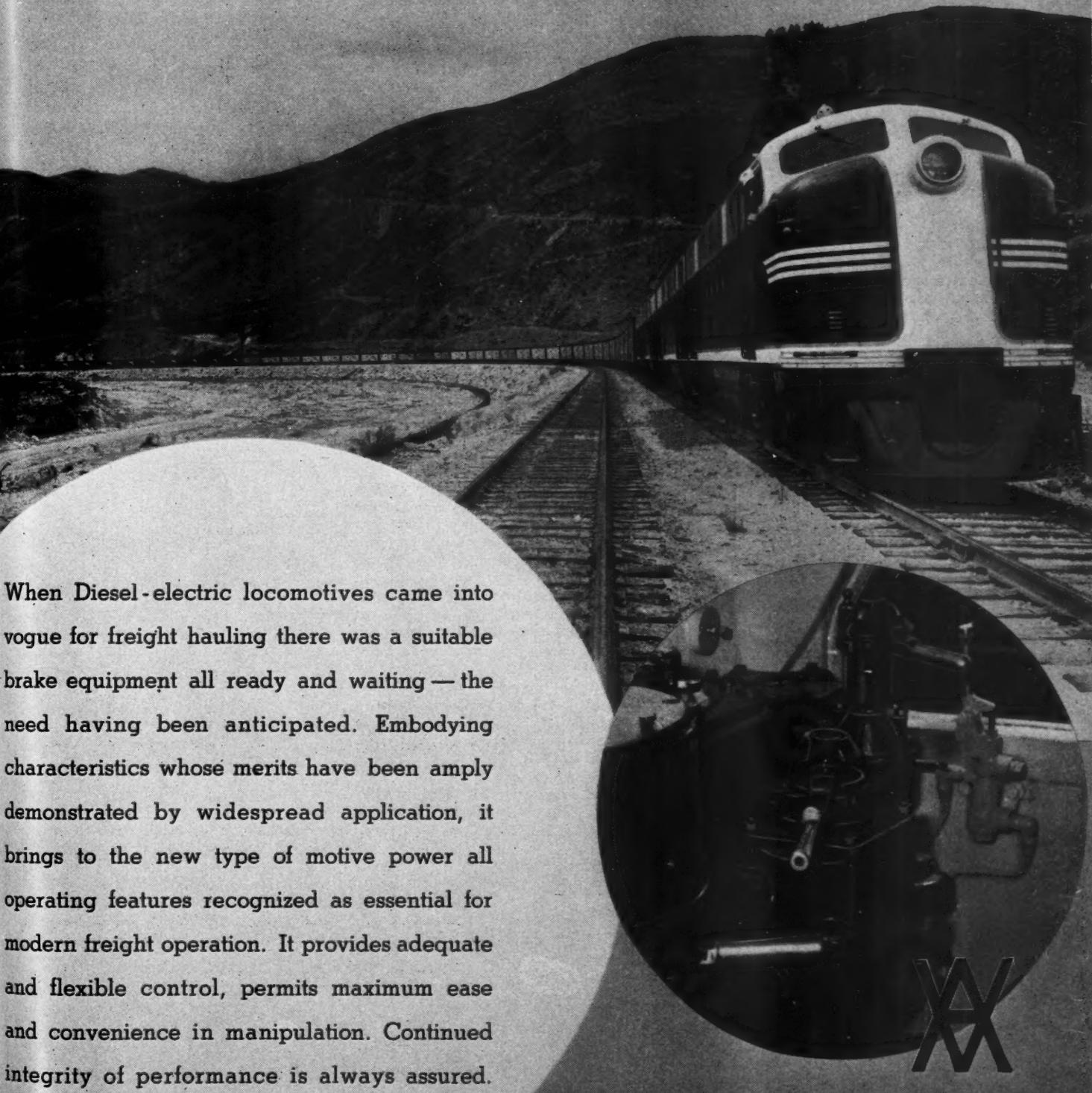
C. E. Martin, engine foreman on the Atchison, Topeka & Santa Fe at La Junta, Colo., has been promoted to trainmaster at Wellington, Kan., succeeding R. D. McGee, who has been transferred to La Junta. Mr. McGee relieves R. E. Knapp, whose transfer to Needles, Cal., was reported in the *Railway Age* of August 16.

W. E. Callahan, formerly district manager at Cincinnati, Ohio, has been appointed office manager of the Car Service Division, Association of American Railroads, at Washington. D. C. R. D. Rifenburgh, assistant to manager, Military Transportation Section, has been appointed district manager at Cincinnati to succeed Mr. Callahan, while R. S. Harlan, car service agent, New York District, has been appointed assistant to manager, Military Transportation Section, succeeding Mr. Rifenburgh.

John W. Myers, whose promotion to superintendent of the Idaho division of the Union Pacific, with headquarters at Pocatello, Idaho, was reported in the *Railway Age* of August 2, was born at Brunswick, Mo., on September 7, 1885, and entered railway service in 1903 on the Denver & Rio Grande Western, serving as a hostler, helper and switchman. On April 2, 1906, he went with the Oregon Short Line (now part of the Union Pacific) as a brakeman at Pocatello and on September 14, 1907, he was promoted to conductor. In May, 1910, he was advanced to yardmaster at Idaho Falls, Idaho, and in November, 1911,

Continued on next left-hand page

Air Brake CONTROL for . . . DIESEL-ELECTRIC FREIGHT POWER



When Diesel-electric locomotives came into vogue for freight hauling there was a suitable brake equipment all ready and waiting — the need having been anticipated. Embodying characteristics whose merits have been amply demonstrated by widespread application, it brings to the new type of motive power all operating features recognized as essential for modern freight operation. It provides adequate and flexible control, permits maximum ease and convenience in manipulation. Continued integrity of performance is always assured.

**WESTINGHOUSE
AIR BRAKE COMPANY**

WILMERTING, PENNSYLVANIA

he returned to Pocatello as a conductor. During the first World War he served with the U. S. Army, 62nd Engineers, Railroad Battalion, in France, returning to railroad service in October, 1925, as assistant train rules examiner on the O. S. L. at Pocatello. In July, 1926, he was appointed a conductor and in September, 1936, he was advanced to traveling conductor. Two months later Mr. Myers was promoted to trainmaster at Montpelier, Idaho, and in August, 1937, he was advanced to assistant superintendent at Pocatello, the position he held until his recent promotion.

O. L. Gray, whose promotion to assistant general manager on the Coast lines of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of August 16, was born in Sedgwick County, Kan., on October 5, 1892, and entered railway service on August 1, 1909, as a file clerk on the Santa Fe at Newton, Kan. From May, 1913, to January, 1920, he served in various clerical capacities at Winslow, Ariz., and on the latter date he was promoted to chief clerk to the superintendent at Winslow. In September, 1926, he was advanced to transportation inspector and in



O. L. Gray

April, 1927, he was promoted to trainmaster at Gallup, N. M. In March, 1932, he was transferred to Winslow and three years later he was transferred to Fresno, Cal. Mr. Gray was promoted to acting superintendent of the Albuquerque division, with headquarters at Winslow in November, 1936, and early in 1937 he was appointed superintendent of that division, the position he held until his recent promotion.

Earl T. Moore, whose promotion to superintendent of freight operation of the Central of New Jersey at Jersey City (N. J.) terminal was announced in the *Railway Age* of August 2, was born on October 14, 1897. Mr. Moore entered railroad service with the Reading in June, 1913, as clerk to supervisor at Lansdale, Pa., being promoted to stenographer in the superintendent's office of the New York division in March, 1916, and to clerk in that office on December 1, 1916. In June, 1925, he became extra yardmaster on the New York division, being appointed general yardmaster at Bethlehem, Pa., in

March, 1934, and assistant trainmaster at Bridgeport, Pa., in May, 1937. Mr. Moore became supervisor of terminals in August,

1936, he was transferred to Fresno, Cal., where he remained until his recent promotion.



Blackstone

Earl T. Moore

1937, freight trainmaster on the Reading division in November, 1937, and trainmaster on that division in November, 1938. On May 1, 1939, Mr. Moore went with the Central of New Jersey as assistant superintendent of the Central division at Jersey City, the position he held until his recent promotion.

Erwin Bland Hebert, whose promotion to superintendent of the Albuquerque division of the Atchison, Topeka & Santa Fe, with headquarters at Winslow, Ariz., was reported in the *Railway Age* of August 16, was born at Sidney, Neb., on April 17, 1890, and graduated from Bethel College, Newton, Kan., in 1908. He entered railway service in June, 1906, as a clerk in the yard office of the Santa Fe at Newton and two years later he was appointed a stenographer in the office of the chief dispatcher at Las Vegas, N. M. In June, 1909, he was transferred to Winslow as a trainmaster's clerk, and later served successively at that point as maintenance clerk, division accountant and chief clerk to the superintendent. In January, 1920, Mr. Hebert was promoted to transportation inspector on the Albuquerque divi-



Erwin Bland Hebert

sion, later serving in that capacity on the Los Angeles and Valley divisions. In October, 1926, he was advanced to trainmaster at Needles, Cal., and in November,

SPECIAL

O. T. Larson, general superintendent of Trans-Canada Air Lines, has been appointed vice-president, to succeed **D. B. Colyer**, who has resigned.

MECHANICAL

E. M. Wilcox, inventor of the car retarding system, assistant superintendent of equipment of the New York Central, Lines West of Buffalo, and the Michigan Central and superintendent of equipment of the Indiana Harbor Belt and the Chicago River & Indiana, with headquarters at Chicago, will retire on September 1. **W. L. Houghton**, master mechanic at Chicago, has been promoted to succeed Mr. Wilcox and **G. P. Roffe**, general foreman of the enginehouse on the New York Central at Linndale, Ohio, has been promoted to succeed Mr. Houghton.

Ralph W. Anderson, superintendent of motive power of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at



Ralph W. Anderson

Milwaukee, Wis., whose retirement on September 1 was reported in the *Railway Age* of August 23, was born in Madison county, Iowa, on May 5, 1877, and attended the Capital City Commercial college at Des Moines, Iowa. He entered railway service in 1892, as a machinist apprentice in the shop of the Des Moines Union Railway and in 1897 he went with the Chicago, Rock Island & Pacific as a machinist, later serving as assistant roundhouse foreman and roundhouse foreman. In September, 1906, he went with the Milwaukee as a machinist at Mitchell, S. D., and the following year he was promoted to assistant roundhouse foreman. In April, 1908, he was transferred to the Idaho division and two months later he was advanced to mechanical foreman of that division. In May, 1909, Mr. Anderson was appointed roundhouse foreman at Avery, Idaho, and in November, 1911, he was transferred to Miles City, Mont. A year later he was promoted to district master mechanic, with the same headquarters, and in June, 1918, he was advanced to

assistant superintendent of motive power of the Eastern lines, with headquarters at Milwaukee. Two years later Mr. Anderson was promoted to superintendent of motive power of the Eastern lines and in September, 1927, his jurisdiction was extended to cover the entire Milwaukee system.

John E. Bjorkholm, assistant superintendent of motive power on the Chicago, Milwaukee, St. Paul & Pacific, has been promoted, effective September 1, to superintendent of motive power, with headquarters as before at Milwaukee, Wis., succeeding **Ralph W. Anderson**, whose retirement on that date was reported in the *Railway Age* of August 23. **Paul Mullen**, master mechanic at Savanna, Ill., has been advanced to assistant superintendent of motive power, with headquarters at Milwaukee, replacing Mr. Bjorkholm.

TRAFFIC

D. L. McCaughan, traveling agent for the Minneapolis & St. Louis at Chicago, has been promoted to general agent, traffic department, at Spokane, Wash., succeeding **David C. Spoor**, deceased.

Ward J. Edwards has been appointed general agent for the Akron, Canton & Youngstown and the Northern Ohio at San Francisco, Cal., a newly created position.

D. R. Alexander, traveling freight agent on the Union Pacific at Kansas City, Mo., has been promoted to general agent at Dallas, Tex., succeeding **E. G. Koene-man**, deceased.

S. E. Mullikin, general eastern agent for the Missouri & Arkansas at Washington, D. C., has been appointed general agent, freight department, at Washington for the Denver & Rio Grande Western, a newly-created position.

W. C. Otten, foreign freight agent of the Erie, has been promoted to foreign

freight traffic manager, with headquarters as before at New York. **T. W. Kane**, grain agent, has been promoted to foreign freight agent, with headquarters as before at New York.

William H. Russell, commercial agent of the Southern, with headquarters at Atlanta, Ga., has been appointed assistant general freight agent, with the same headquarters, succeeding **F. C. Toal**, who has been furloughed for service in the United States Navy.

L. L. Lapp, district freight traffic manager for the Gulf, Mobile & Ohio at New York, has been promoted to executive general agent, with headquarters at Washington, D. C., a newly created position, and **R. F. Hobby**, resident freight traffic manager at Washington, has been appointed district freight traffic manager at New York, succeeding Mr. Lapp. **D. L. Jones**, division freight agent at Memphis, Tenn., has been appointed division freight traffic manager at Montgomery, Ala.

ENGINEERING & SIGNALING

David F. Apple, acting division engineer of the Cincinnati division of the Chesapeake & Ohio, with headquarters at Covington, Ky., has been promoted to division engineer, with the same headquarters.

J. F. Zanolio, master carpenter on the Denver & Rio Grande Western at Alamosa, Colo., has been appointed acting division engineer with headquarters at Grand Junction, Colo., relieving **E. T. Barrett**, whose appointment as acting trainmaster at Grand Junction is reported elsewhere in these columns.

OBITUARY

Ernest Wanamaker, who retired in February, 1940, as office engineer (electrical) for the Chicago, Rock Island & Pacific, with headquarters at Chicago, died

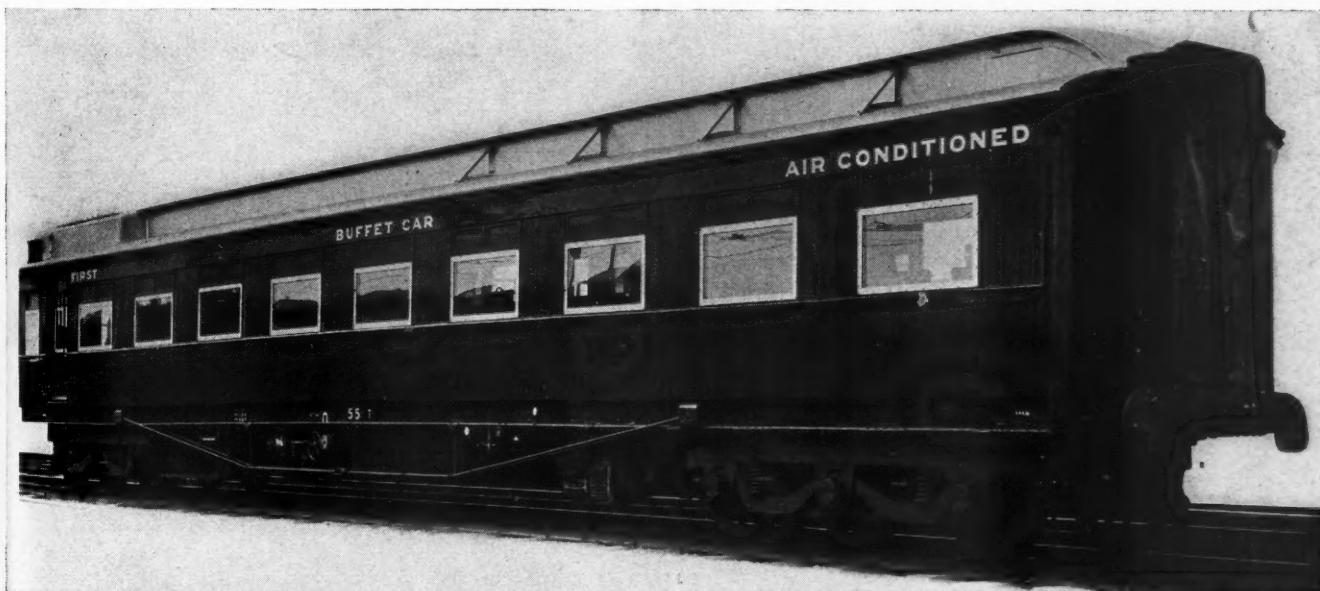
* * * *

on August 22 at his farm in Missouri after an illness of about a week.

William Endicott, president of the Boston & Albany Railroad Company, with headquarters at Boston, Mass., died on August 25 at Beverly (Mass.) hospital, after a brief illness, at the age of 76. As Boston & Albany president, Mr. Endicott directed only the corporate affairs of the road, operation of which is entirely in the hands of the New York Central, which leased the line in 1899 for a term of 99 years.

Guy H. Gilmer, president and director of the Interstate railroad, with headquarters at Andover, Va., died at his home in Big Stone Gap, Va., on August 15, after an illness of about two years. Mr. Gilmer was 58 years old. He started his railroad career at the age of 14 with the Norfolk & Western, serving successively as call boy, yard clerk, stationmaster, and yardmaster. On September 1, 1918, he went with the Interstate railroad as superintendent, being promoted to general manager on April 1, 1924. Mr. Gilmer was elected president and director on December 6, 1928.

George C. Ransom, former chairman of the Canadian Freight Association, Eastern lines, with headquarters at Montreal, Que., died on August 19 at his home in Notre Dame de Grace, Que. Mr. Ransom was born on August 20, 1864, at Victor, N. Y., and became a clerk with the New York Central Fast Freight line at Rochester, N. Y., on June 6, 1887. In November, 1899, he went to Detroit, Mich., where he served in the office of the freight traffic manager of the Michigan Central, later becoming division freight agent of that road at Buffalo, N. Y. He held the latter position until August 15, 1912, when he resigned to become chairman of the Canadian Freight Association, the position he held until his retirement in January, 1940.



Courtesy Victorian Government Railways

This Air-Conditioned Buffet Car Has Recently Been Placed In Service by the Victorian Government Railways, Australia. Patrons Sit At A Long Counter On Cafeteria-Type Chairs To Partake of Grills and Varied Light Refreshment

GET TOGETHER DEPARTMENT

EDUCATIONAL

DISTINCTIVE EDUCATIONAL SERVICE

for Supervisors and other employees—Transportation Sales Training Service. Special Bulletin furnished FREE.

THE RAILWAY
EDUCATIONAL BUREAU
Omaha, Nebraska

POSITION WANTED

Mechanical engineer, university graduate, 43, development engineer railroad equipment 6 years, railroad shop and mechanical engineer's office 13 years. Present position mechanical engineer large railroad. First class man, ambitious, best of references. Can meet people and get things done. Want engineering or sales work. Address Box 564, RAILWAY AGE, 30 Church Street, New York, N. Y.

WANTED

CARS; Freight & Passenger CAR PARTS; Used or New RAILS; Relaying LOCOMOTIVES; Steam, Diesel or Electric CRANES & SHOP EQUIPMENT

ISP always rewards responders to their ads with their popular WEAREVER Pencil.

IRON & STEEL PRODUCTS, INC.

36 years' experience
13486 S. Brainard Ave.
Chicago, Illinois

"Anything containing IRON or STEEL"

IMMEDIATE DELIVERY

110—40-Ton, 36-ft. Box Cars, steel c/s, steel ends and roofs, U section side frames; built 1925.

IRON & STEEL PRODUCTS, INC.

36 years' experience
13486 S. Brainard Ave.
Chicago, Illinois

"Anything containing IRON or STEEL"

Remainder Book Bargains

STEEL OF EMPIRE

By John Murray Gibbon

"The Romantic History of the Canadian Pacific, the Northwest Passage of Today," by the dean of Canadian historians, is one of the great epics of railroad history. From earliest beginnings the author traces the visions of the northern route to the Indies down to the present-day ribbons of steel across Canada, and the connecting steamship lines which reach from Southampton to Shanghai.

432 pages, 140 line sketches, 140 photographs, 17 color plates, 2 maps in color, 6 x 9, cloth, \$1.50.

DANIEL WILLARD RIDES THE LINE

By Edward Hungerford

The biography of the dean of American railroad officers and Chairman of the Board of the Baltimore and Ohio. The story begins with boyhood days on a Vermont farm 70 years ago. It traces his rise from menial tasks to locomotive engineer on the "Soo Line," and then more responsible work on the Baltimore and Ohio, the Erie, the Burlington and back to the B. & O. as president.

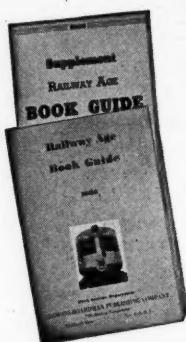
352 pages, illustrated, 6 x 9, cloth, \$1.00

BOOK DEPARTMENT

Simmons-Boardman Publishing Corporation
30 Church Street
New York, N.Y.

RAILWAY AGE

BOOK GUIDE



Here is a handy reference booklet on railroad books that are of interest to readers of "Railway Age." In it are described practically all of the books published during the past decade that are in print. They are classified under subject headings and arranged in chronological order. A title index in the back facilitates quick reference.

SUBJECT INDEX

Accounting — Administration — Consolidation — Co-ordination — Economics — Finance — General — History — Law — Officers — Personnel — Rates — Regulation — Statistics — Traffic Management — Valuation.

1936, 28 pages, 6 x 9 inches, paper cover.

1938. 12 page Supplement.

Free on Request

**SIMMONS-BOARDMAN
PUBLISHING CORPORATION**

30 Church Street, New York, N. Y.